

BOARDWATCH MAGAZINE

Guide to the Internet, World Wide Web and BBS

CYBERCAFÉS

**NEIGHBORHOOD COFFEE SHOPS -
INTERNET FOR THE CAFFEINE DEPENDENT**

REED HUNDT ON THE FUTURE OF INTERNET

**FCC CHAIRMAN DETAILS
VISION OF THE FUTURE**

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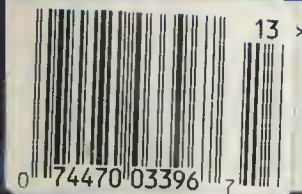
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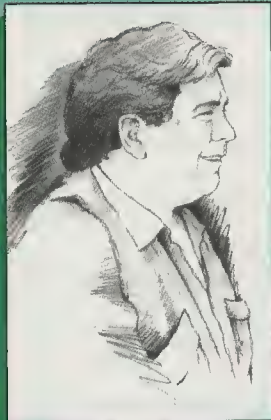
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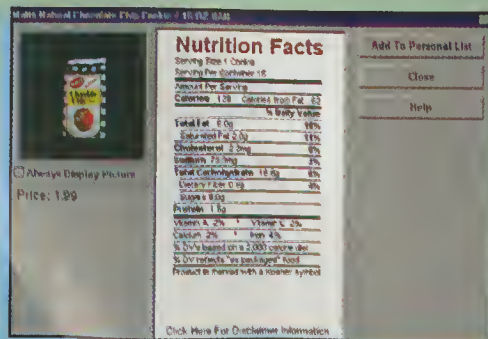
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EDITOR'S NOTES

STATE OF THE INTERNET SERVICE PROVIDER

We've gone through quite an evolution here at Boardwatch in preparation for the release of our third issue of the Directory of Internet Service Providers. We asked a few more pointed questions of Internet Service Providers, and expanded the number of national backbone operators diagrammed in this issue. As a result, the rock of our technical effort, Gary Funk, is nearly expired. But we've learned a great deal in the process.

There are a lot of very expert opinions floating around out there. They are quite easy to generate, and much more difficult to prove or disprove. We've rather taken it as a mission to find out and either claim "yea - verily so" or "liar, liar, pants on fire." Our small voice may be no more convincing than the shoot from the hip generators of so many \$2400 per-copy studies. But we're curious, and we suspect our readers are as well.

THE INTERNET SERVICE PROVIDER MARKET WILL CONSOLIDATE TO A HANDFUL OF PLAYERS STARTING THIS YEAR. This has been very often predicted. It is a kind of mindless take-off on the automotive industry where a hundred or so small companies became three large companies. There are a couple of problems with this theory. First, it took about 100 years for all that to happen. Second, it didn't happen in ALL industries. Name the big three that own all the dry cleaning stores in the country for example. Simply applying the automotive or television model to telecommunications is actually terrifyingly stupid. It SOUNDS like it makes sense, but it doesn't.

It's been over 100 years since Elisha Gray and Alexander Graham Bell raced to the patent office to file their telephone patents. By law, telephone service is widely perceived as a regulated monopoly. Did you know that as of 1996 there were still some 550 LOCAL telephone companies - many quite small and quite rural, but telcos nonetheless. There are also several hundred long distance companies. And you may not be aware, that in the face of Turner and TCI and so forth owning all the cable companies, there are actually about 2000 of THOSE out there with an average 3500 customers apiece.

So why is a shakeout of Internet Service Providers inevitable? I don't get it. In any event, there were 1454 in February 1996, 2266 in May, and as best we can tell 3068 in October. There could very easily be 4500-5000 in the United States by this time next

year. I don't see the growth curve as infinite, but it is healthy.

Worldwide it gets even better. Brazil and Australia are deregulating their telecom systems and this seems to be a trend across the globe - a seemingly glacial one for those who need connectivity but a trend nonetheless. We would predict 10,000 ISPs worldwide by the close of 1997.

The remaining questions very much in vogue these days have to do with why the Internet feels like it is breaking down. It doesn't seem to operate very well at times. There are several theories as to why that is.

INSUFFICIENT BACKBONE CAPACITY. This theory holds that the backbones and the interconnecting network access points between backbones are overburdened and suffering huge packet losses and this is why the Internet isn't working so well today.

ARCHITECTURAL FLAWS: This theory holds that some of the basic premises of building an IP network have design flaws that make them non-scaleable. For example, the traffic in advertising routes from one router to another is heavy and the process of updating routes is a resource hog. The domain name server system likewise causes heavy traffic and difficulties in associating domain names and IP numbers. IP address space is limited.

OVERSUBSCRIPTION OF SERVICE: This theory holds that Internet access has been sold after the fashion of drugs with too many small ISPs connected in too many layers and selling more connectivity than they themselves purchase.

INADEQUATE SERVER CAPACITY: This theory holds that many of the web servers, mail servers, ftp servers, etc. on the Internet simply do not have sufficient connectivity and hardware horsepower to satisfy demand for data from the clients trying to connect to them.

Which theory is held as correct is almost solely a function of the position of the person holding that opinion. If you run a web server, it is almost certainly a backbone problem. If anyone wants to know why your web server is slow, point to the backbone operators and note that the Internet is breaking down.

If you operate a national backbone, the obvious problem is all of these small Internet Service Providers who muck everything up with their low prices, lack of expertise, and oversubscription of Internet service.

If you are a small ISP, it is of course the backbone operators who are at fault and all small ISPs have some very detailed opinions about

how it is all architecturally flawed and the domain name system, and the IP addressing, and the routing is all hosed by the big guys and anyway it is a plot to remove them, as small ISPs from the face of the earth.

In our fall directory, we note the increase of national backbones from 9 to 13 - with almost all the additions putting up 45 Mbps ATM switch meshes. All connectivity is not equally distributed among these backbones, but we probably have 13 times the backbone capacity we had when the National Science Foundation closed their single 45 Mbps network in April of 1995. The larger backbones such as MCI are going to 155 Mbps and even 622 Mbps links. I rather reject the concept that there is insufficient backbone bandwidth.

My own favorite theories revolve around the architectural flaw theory, and as I've stated many times, the inadequate server capacity theory. There are undoubtedly some problems with route flapping. For the non-technical, this can be equated with an e-mail storm between routers where an attempt to update advertised routes in the routing tables gets a little out of hand. Unfortunately, it brings down routers at times causing serious problems in the network. I'm also very suspicious of domain name servers on the Internet. The system isn't working as designed. Rather than update domain name servers, too often we point one domain name server to another, to another, to another in a string of historical moves that leave incredible "chains" of pointers. No one ever cleans any of this up. And so delays in looking up domain names are often a problem.

But the real cause of most performance problems are simply slow servers. Anyone can detect this with just a little experimentation. There is a Jet Propulsion Laboratory web server, for example, that for some reason is just a beast. I've located a number of very large TIF images of SIR-C/X-SAR radar image data on one of these servers that I can move a 70 MB file at fairly brisk 70-80 kbps rates any time of the day or night. Yet if I pick another web server in the same geographic area, and connected to the same backbone, I can also get 150 bytes per second at best - any time of the day or night. This rather indicates my connection is ok, the backbone I'm connected to is ok, the NAP connecting my backbone to their backbone is ok, and their backbone is ok. But at the server end, everything is not ok.

But we've done quite a bit with the fall directory survey to try to eliminate the oversubscription theory as well. This involves some examination of small Internet Service Providers. Some are not so small anymore. Several regional ISPs have made the jump to national backbone operator status including GoodNet, Digex, DataXchange, and several

others appear poised to do so such as ATMnet, GridNet, and a few others. And we are seeing some significant results from IPOs among small service providers - eight or ten that were in 10-15 area codes just a few months ago have expanded to 150 or more area codes almost overnight. Everyone wants to be "national".

In compiling our Fall Internet Service Provider directory we did learn some more detailed information about Internet Service Providers. The following numbers exclude the top and bottom 10% of all ISPs, which pretty much leaves out all the national backbone providers, large commercial services, and telephone companies, as well as a significant layer of truly one-man operations at the bottom:

The average ISP has been in business 22.2 months and sports 12.98 employees. They have a gross annual income of \$637,571.76 or \$49,119.55 per employee. They have an average annual investment in hardware of \$125,698 and an average annual investment in software of \$39,917.

Among those providing dial-up services, they average some 1843.53 customers and sport an average of 198.95 dial-up ports to support those customers. This would indicate about 9.26 dial-up customers per modem overall. Of those that actually did report both the number of dial-up customers and the number of ports, the average was 8.47 customers per modem.

If we INCLUDE the top and bottom 10%, the average number of dial-up customers was more like 2272.6 among 2568 providers answering the question for 5,836,037 users. Applying the average to all 3068 ISPs we list would render 6,972,337 dial-up users served by this group. We know from several outside surveys that almost exactly 60% of those on the Internet are there via a dial-up connection. This would indicate a core group of 11,620,561 including dedicated access people that are pretty seriously using the Internet in North America. Note that this does NOT include AOL and CompuServe and Prodigy and those connected by dial-up via proxy servers and who have theoretical access to IP if they knew it. But it would be pretty believable at this point to round things up to about 15 million who do web/IP and easily 25 million who have active e-mail accounts in North America.

The average bandwidth of ISPs in our center 80% had in THEIR connection to the Internet was 2.94 Mbps and the average bandwidth per modem port was 14.43 kbps. Again there is some disparity because not everyone reported both bandwidth and number of dial-up ports. We have developed a figure of merit, called traditionally enough, Q. This is simply the amount of bandwidth per port divided by the expected 28.8 kbps connection from the user site to the ISP. So the average Q is approximately 0.50.

This is somewhat significant in that one of the claims of poor web performance on the Internet is that ISPs are oversubscribing the Internet - essentially selling more connectivity than they have. The data would indicate that two 28.8 kbps modem callers are sharing 28.8 kbps of bandwidth - or about half. In reality, most of our use of web pages/file transfers is such that we spend probably more than half our time reading screens already on our own machines. From experiments we have performed on web usage patterns over even a fair-

ly small set of users and dial-up modems, we would not be the slightest bit alarmed at a Q as low as 0.20 - particularly on services with the average 200 ports. But note that nearly half of our ISPs also provide dedicated access connections, and perhaps with even more impact, web hosting services. So the 0.50 figure is probably appropriate there. It would not appear that oversubscription of Internet service is the culprit in slow Internet service.

Interestingly, a significant number of Internet Service Providers consider their connection to the Internet proprietary and likewise the number of dial-up ports. We not only reject this concept out of hand as hopelessly naïve, but actually would label it FRAUD. If you are considering the purchase of a dial-up account from an Internet Service Provider, and they will not indicate how many dial-up ports they have available and what bandwidth they have to the Internet itself, they are asking you to buy an unknown product of unknown characteristics. A kind of "you can buy the car, but we consider what type of engine it has to be proprietary" approach that is simply not legitimate. But in weighing Q values, you might also ask if they offer dedicated access or host significant numbers of web sites. If so, you would look for a higher Q. If not, something in the area of 0.20-0.25 is perfectly appropriate.

The average ISP adds 143.23 new customers to their existing 1843.53 customers each month, an annual growth rate of some 93%. And the average hardware/software cost to support a new customer would appear to be \$104.17.

This is a bit interesting. Steve Wolff, once the National Science Foundation NSFNet Czar, recently voiced the wishful thinking of many of the larger players on the Internet that \$19.95 was an artificially low price and people must pay more to fund the improvement of the network. He made this statement at a small forum in Aspen Colorado where the local Roaring Forks Internet User Group was touting some 2800 happy subscribers who each paid \$10 per month for unlimited service. The group was taking in nearly \$30,000 per month in this manner and installing a brand new U.S. Robotics Total Control system to upgrade the equipment.

From our data, it would appear the investment by ISPs in hardware and software to support a customer is just over \$100. Connectivity would appear to be about 14.4 kbps at an average cost of \$2300 per month for a 1.544 Mbps or \$1489 per Mbps would work out to about \$21.45 per month per port. With 8.47 dial-up customers per port, this looks like about \$2.53 in connectivity costs per customer per month or \$30.39 per year per customer for connectivity. With that at the now almost universal \$19.95 per month a customer that was on the service for a year would generate some \$240 income or thereabouts. With hardware, software, and connectivity costs of \$130, this does not seem to us to be high, low, or indifferent. It looks like a business. The remaining \$110 is hardly pure profit but must go to customer acquisition costs, labor, office space, etc. But it looks like a going concern at \$19.95 per month, particularly if the usual 20% (80/20 rule) upsell to something more profitable.

We also found out a great deal about how these ISPs were connected. There has been a perception that Internet connectivity travels

through multiple layers from a backbone, to an ISP, to another ISP, to yet another ISP, and so forth such that there are many layers to Internet access. It would appear that this simply isn't true.

Some 60.65% of all non-backbone ISPs get their connection directly from a national backbone. Of the remaining 39.35%, virtually all are connected to an ISP that is connected directly to a backbone. Less than half of one percent are more than one step removed. It is a relatively flat hierarchy. And a total of 14% are actually "multi-homed" to two or more different national backbones. Some of these ISPs actually start to look like a NAP themselves with four or five backbones connected. And a handful of ISPs actually don't appear to operate a national backbone, but they do connect directly at NAPs such as MAE-EAST and MAE-WEST with 100 Mbps ethernet connections. We don't know exactly HOW to figure their Q but it looks pretty good.

And who are they connected to? Surprisingly, MCI is the most popular backbone on the Internet, followed closely by Sprint. ISP market share among backbone operators looks like:

MCI	32.85%
Sprint	29.51%
UUNET	16.74%
AGIS	7.30%
BBN	2.41%
iStar	2.15%
DataXchange	1.49%
ANS	1.32%
CRL	1.28%
Digex	0.83%
Other	4.14%

So MCI, Sprint, and UUNET comprise some 79% of the backbones ISPs connect to. The two most common questions we receive from ISPs are "How many modems can I connect to a 1.544 Mbps T-1 line?" and "How many dial-up customers can I support on each modem?" We don't know how many you CAN do in either case. But the national norms would appear to be 100-110 modems per 1.544 Mbps T-1 connection and 8.5-9.0 customers per modem. Roughly a thousand dial-up customers per T-1. It simply does not look oversubscribed to me. And we're seeing many cases of small ISPs, running 32 or 64 lines on a single T-1 connected directly to a Sprint or MCI backbone node, that are probably providing the best Internet access available anywhere at really bargain prices.

More detailed information on our survey is of course available in the **Fall Directory of Internet Service Providers** which should be on the newsstand at \$9.95 as you read this. You can also order from us directly at \$9.95 plus \$4 s&h at 800-933-6038 or <http://www.boardwatch.com>.

Jack Rickard
Editor Rotundus





Letters to the Editor

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LETTERS TO THE EDITOR

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D-DAY IN THE BROWSER WARS... NEW JAVA WEBSITE PUTS INTERNET EXPLORER CLEARLY IN THE LEAD.

Take a tour through eleven of Canada's top art galleries in this Java enabled virtual gallery!

<http://www.artwave.rogers.com>

The site is composed of galleries from the east to the west coast of Canada including the Art Gallery of Ontario, the Glenbow Museum, The Power Plant, the Vancouver Art Gallery, the Musee d'Art Contemporain de Montreal, Winnipeg Art Gallery, Art Gallery of Hamilton, Art Gallery of Nova Scotia, the National Gallery of Canada, London Regional Art and Historical Museum, and the Edmonton Art Gallery.

The site is available in both Java and non-Java formats.

Project partners were Sun Microsystems, Bruce Mau Design, and Medius Communications.

Needless to say, it was quite an exciting time getting the Java code to work properly in Netscape 3.0 and IE 3.0...and when it was all finally done....we found that IE 3.0 absolutely tore Netscape apart. It was like General Patton ripping through Europe!

You'll notice if you compare the way Netscape handles graphics within an applet as opposed to IE 3.0, Netscape displays the toolbars clouded and somewhat distorted, something they promised to fix for their 3.0 release. IE 3.0 on the other hand displays the graphics perfectly.

When talking about speed, the site is designed so that the first applet takes 35-40 seconds to download, it is then cached, and when further "rooms" are entered, they will initialize in about 15 seconds. IE 3.0 usually fully loads the "room" in 11 seconds! Netscape on the other hand takes twice as long! See for yourself...

Anyhow, everyone on the development team always relies on "Boardwatch" as THE source of web happenings and we have closely followed your coverage of "the browser wars".

I thought I'd drop you this note to provide a "battleground" for the browsers.

<http://www.artwave.rogers.com>

Keep up the great work!

Regards,
Andrew Francis
afrancis@rci.rogers.com
Internet Team Leader
Rogers Communications Inc.

Andrew:

Thanks for the update - an interesting comparison I think our readers may find of note.

Jack Rickard



Jack,

I thought you might be amused by the following excerpt from some audacious junk mail that arrived in my CompuServe mailbox:

"Note - I purchased a "Flame Free" email list. If for some reason, I have been misled, then please don't flame me. I apologize. To be automatically dropped from our mailing list, simply respond with REMOVE in the subject line and nothing else. This immediately deletes you from the database.

Thank you for your time,

Ultragrafix Unlimited Inc.
PO Box 170959
Arlington, TX 76003
(817) 472-9516

I've never heard of a 'flame free' mailing list before. I'd like to find the person who can create a flame free mailing list to see if they also have the power to grant me a flame free life!

One of the junk messages that I received was an ad for a junk e-mail program! My CompuServe mailbox seems to contain more junk e-mail than real e-mail. I'm sure that a lot of new users are questioning the value of e-mail if most of what they receive is junk e-mail.

All the best,

Adam

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P.S. Some of the messages don't mention any method by which I can have my address removed from the list. Other messages request that a reply be sent to an address other than the sender that includes the word "remove" in the subject or header. WinCIM 2.01 will not activate the "Out Basket" or "Send Immediately" buttons in mail unless there is at least one character in the subject field and at least one character in the message body. The efficient thing to do is to delete all junk e-mail since WinCIM doesn't have any filtering rules and CIS has a surcharge for internet mail. ISPs that can provide an e-mail package that has good e-mail filtering features will have an edge over commercial services that do not offer e-mail filtering.

Adam:

Junk e-mail is no longer an anomaly. It has become a business. And there are numerous entrepreneurs out there marketing "mailing lists" of compiled e-mail addresses. Some novices to the net are unaware that such mail can cause resentment, and in an effort to get the word out, rent one of these lists and are then surprised to learn that everyone they just e-mailed now thinks they are somehow in league with Satan. Apparently, we now have an e-mail marketing list salesman that is taking it the next step and assuring people that everyone on this list doesn't mind getting useless e-mail in their inbox?

The issue is approaching critical. The pros haven't even started. I heard a rumor that NeoData, one of the largest direct mail companies in the country, now has 400,000 e-mail addresses in a database. Further, we are seeing some increasingly sophisticated software that allows a single individual with a 28.8 kbps PPP connection to spew forth 20,000 e-mail messages per day.

And the solutions are pretty thin right now. I just watched a group of Internet Service Providers on a mailing list go through a discussion of this. Their solution? "We'll all band together and run the spammers out of town and blackball anyone that harbors them." Within 24 hours I received an e-mail message, SPAM actually I guess, from an ISP that is now going to SPECIALIZE in offering

shell accounts to e-mail marketers. It's a war out there.

We're going to devote most of our coming December issue to junk e-mail, e-mail marketing, and spam. I don't know that we can cure anything, but we can certainly flush some of the information on it out into the open.

Jack Rickard

◆◆◆

Hello Jack,

Attached is an Email message that I sent off earlier this week to Netscape. Because of a bug in Netscape Navigator (or possibly in Windows 95) it is now possible for people to send Email messages that crash other people's computer when the messages are read. Its the "Good Time virus" for real. My message to Netscape gives all of the details. Netscape has acknowledged the problems and promised a fix shortly.

I think this issue is a "big deal" that deserves wider coverage in the press. I would be happy to discuss the implications of this problem with one your editors at Boardwatch.

Richard M. Smith
President, Phar Lap Software, Inc.
(617) 661-1510
www.pharlap.com
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Hello X,

I was given your name by Larry Seltzer of PC Magazine. He thought that you would be the best person to talk to at Netscape about an apparent security problem that I have discovered in the Windows 95 version of the Netscape Navigator 3.0. What I found is that it is very easy for a malicious person to send an Email message whose contents will crash the mailer reader in Netscape Navigator of the person receiving the Email message. In some cases, I also found that the entire computer will lock up, taking down any other active applications and possible resulting in the loss of work. In addition, it is somewhat difficult for the person receiving the Email to delete it from the Navigator inbox without again causing a crash. I nicknamed these malicious Email messages "Email Letter Bombs".

Here is scenario to show the "Email Letter Bomb" problem:

1. The sender creates an HTML file named BOOM.HTM on their hard disk whose contents are:

```
<html>
<head>
  <title>Boom, this page locks up
  Netscape!</title>
</head>
<body>
  Boom, this page locks up Netscape!
  
  
```

```



</body>
</html>
```

2. The sender starts up Netscape Navigator from Windows 95 and goes into the Netscape Mail program.
3. The sender composes an Email message that contains BOOM.HTM as an attachment.
4. The sender sends the final Email message to the intended victim(s).
5. When the receiver reads the Email message with the Netscape Mail program, Navigator will lock up. The lock up occurs when the mail program attempts to display the BOOM.HTM attachment. My understanding is that the Netscape Mail program automatically shows Email attachments by default.
6. A person who is computer savvy can kill a hung Netscape Navigator by hitting CTRL-ALT-DEL and telling Windows 95 do an "End Task" on Navigator. A person who is less knowledgeable about Windows 95 will probably have to turn off and on their computer losing any work-in-progress.

Why is Navigator crashing? The problem is that Navigator is trying to read a GIF file from serial ports COM1 thru COM4. Since no data is coming in on these ports, Navigator will hang forever. To solve the problem, Navigator should be filtering out reserved DOS device names and disallowing them in URLs.

These reserved DOS device names are COM1 thru COM4, AUX, LPT1, PRN, and NUL.

Here is some more data points to the problem:

- If the device name is changed to AUX in the IMG tag, my computer locks up completely after Windows 95 shuts down Navigator. I haven't really had a chance to try this variation on other computers to see if all systems crash. If this behavior happens on other systems, the "Letter Bomb" problem is much worse.

- On some systems referencing the LPT1 device name also causes lock ups. On other systems, Navigator shows a broken picture icon.

- The following other HTML tags which take URLs also crash if a reserved DOS device names is used in a tag:

```
EMBED
FRAME
A
```

- Interestingly, the SCRIPT and APPLETT HTML tags do not crash if they are given reserved DOS device names.

- Because I haven't run extensive experiments, I am not sure how widespread the

problem is. I have got crashes to occur on about 10 different Windows 95 systems.

- Navigator also crashes if a reserved device name is typed into the Location Window. The Windows 95 open dialog on the other hand does not allow a reserved device to be typed in.

- Obviously, the BOOM.HTM page can also be posted on a Web site causing a browser or system crash to anyone has the misfortune of visiting the page.

- I haven't been able to verify this myself, but other people have reported to me that the Windows NT and OS/2 versions of Navigator don't appear to exhibit the problem. Pretty obviously, the Mac and Unix versions of Navigator won't have the problem either.

- Microsoft's Internet Explorer 3 does not appear to exhibit the problem either. I believe it disallows a DOS device name to be used in an URL.

If you have any questions about this problem, please feel free to give me a call at Phar Lap. My phone number is (617) 661-1510.

Given the serious nature of this problem, I think a fix needs to be developed right away and distributed to end-users. To my knowledge this is the first time that a Email program allows the "bad guys" to send Letter Bombs.

Richard Smith
75070.2253@compuserve.com

Richard:

Thanks for sharing the methodology here. Unfortunately it is not the first bug to allow the bad guys to send letter bombs. E-mail is widely viewed as an unglamorous and simple minded nearly obsolete element of the Internet experience. I rather view it as the ultimate killer application that drives the network, and I think it is devilishly difficult to write.

I myself wrote a UUCP e-mail application that did mailing lists and is probably the only 100% assembly language UUCP implementation on the planet even yet. It was very fast, which unfortunately made it very fast at spewing forth tons of errant e-mail messages.

E-mail applications and their use of various features are interactive. In this respect, all e-mail programs have to be able to deal with the vagaries of each other. It is simply not as simple as adhering to an RFC-822 spec and hoping for the best. Mail storms are terribly easy to create inadvertently - even when there are no bad guys and no intent to damage.

But yes, as we expand to include file attachments, HTML, etc. it is going to get worse. I wonder how any of it works at all some days. But thanks for sharing the specifics of this problem with us, our readers, and Netscape.

Jack Rickard

◆◆◆

INDUSTRIAL USE OF THE INTERNET

Mike,

I saw your name, article and e-mail address recently in bw and thought to get your keen insight and opinion on an issue which I have been researching. To wit:

The Internet is developing along academic, retail commercial and public lines rather nicely. Question: Where is it going with regard to non-retail commerce, manufacturing and general industrial companies? In other words, what, in your opinion, will be the task specific applications of the net for industrial commerce? And, when do you think, industry will awaken to the power of the net?

So, is this fad or fortune for the Fortune 500,000?

Thank's very much for any thoughts you might have.

Sincerely,

R L Parke
us038747@interramp.com
3wBusiNet
Dallas, TX

Mr. Parke,

Let me pull out my soap box...

As you stated, yes the Internet is developing quite nicely in a Consumer driven environment.

As for non-retail usage of Internet based technology just take a look at the FedEx web site. They offer their pickup services, but you can also track a package you sent in near-time. Many corporations are leveraging this technology to gain additional market share. For example, since my actual day job is with a rather large industrial manufacturing company, they are using it for distribution of technical information to engineers around the world. Not to mention the use of "the net" to help gather sales leads.

On the internal side of the wall, we use web browser technology to manage devices, data entry, data queries, EDI, applications deployment and internal company communications. All across various hardware platforms.

This power is used by many corporations. It gives them a seamless interface which initially helps in training and usability, but can also help change how the company actually does business.

If you just look at the corporate use of LAN technology, you will see that many companies will use available technology to gain ground on the competition. Because many companies in the "Fortune 500,000" will always be clueless. Which is great for many corporations. Whether it be as simple as using E-Mail, or as complex as application deployment. Many corporations really do understand the power of the "net", which in reality is just a really big LAN right?

However, on the flip side of all of that, many of the seemingly smart managers of these companies will throw millions at "the net", and will be "right-sized" out of existence. Why? Because of their failure in the implementation, i.e. user training, lack of security and poor support. This poor support can be a two edge sword, management and technical. Failure to handle either one will kill a great idea. Many CIO's have bet their career on "the net". Those that are successful will go on to become a CEO, those less fortunate, will be buried alive. "Survival of the Fit"

All in turn making many in management gun shy. You have probably heard of the "Peter Principle". To paraphrase it, people will rise to their level of incompetence. Once they reach that level, they stay at that level, forever. Incompetent and in management.

As long as the "profitability" benefits outweigh the costs, companies will aspire to reach oneness with "the net". But then again... most people today use less than 10% of the capabilities of everything. i.e. Brains, Pentium PRO CPUs, Excel or 1-2-3, VCRs and Microwaves. The list is endless. We could even get into the discussion whether or not computers have made life "better".

I guess this means that my answer to whether this is "fad or fortune for the Fortune 500,000", would have to be an absolutely positive maybe...

I'll put the soap box away now... <grin>

Michael Erwin
mikee@access.eve.net
Boardwatch Magazine



Dear Mr. Rickard:

I am delighted to finally be able to write to you with something useful to contribute (I hope <grin>). I have read **Boardwatch** for many years, attended the 1994 ONE BBSCON (where I got to meet Ted Nelson, thank you, thank you) and always look forward to my copy of **Boardwatch** coming in the mail because as we all know (or should know) you guys not only talk the talk, you walk the walk. And in language we all can understand. Thanks for a great magazine and the boatloads of inspiration and encouragement you have given me over the years.

Among other things you've inspired me to do, one was to write a cyberspace column for my local hometown paper for about 6 months last year, trying to present the Web and the Net in a straight-forward, down to earth way, trying to emulate the style of **Boardwatch**, trying to show people that it wasn't all kiddie-porn and video-games, which seemed to be the prevailing opinion at the time. In that column I referred to **Boardwatch** as "the" place to go to get non-hyped information. I think the idea of a column in a local paper as a way of getting peoples interest in the Net is a useful marketing tool for the local ISP and I pass it on for what it's worth.

Since then I have created my own website. Part of that website is something called The WebFuture Project <http://www.thecurrent.com/webfuture/spring.htm> in which I have tried to look at the future of the Web, again in a straightforward, **Boardwatch**-style way. In one section called The Web - coverage of operations and that section is devoted to only one resource; you guessed it, Boardwatch. Some small recompense for all you have given me over the years, I know, but I'm very happy that I can do it.

Incidentally, your article about getting your mom hooked up to the Net had me in stitches. I had a similar experience this summer and it was very funny to read your comments. The big challenges that ISPs face now, I think, is getting hold of that big customer base who are not terribly interested in computers. I read a report of a survey recently which said that 50% of American's did not "want" to buy a PC. In that light I wonder what you think about the new SONY Playstation device which converts a playstation into a Web connect box, complete with 28.8 modem? It seems to me that the three big challenges that the small ISP faces in getting hold of that customer base are cost of PC, ease of installation and robustness of software. Do you think this type of device could really blow open the market?

Regards/Paul

Paul F. Peacock
www.thecurrent.com

Paul:

I'm not sure what you mean by "blow open the market." If successful, it will likely create new markets. I'm reminded that in the early 1980's, one of the more popular applications for personal computers was in game software. It became rather hugish. Within just a few years, a highly specialized computer was developed to play these games. Today, there are probably more Nintendo and Sega machines on the planet than all other personal computers combined.

But they aren't really personal computers. They are video game machines. They are easy to use, some of the games are fascinating, and they are relatively inexpensive, despite the fact that some of them are really 64-bit computers now.

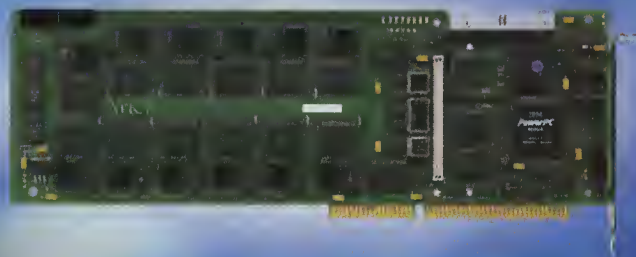
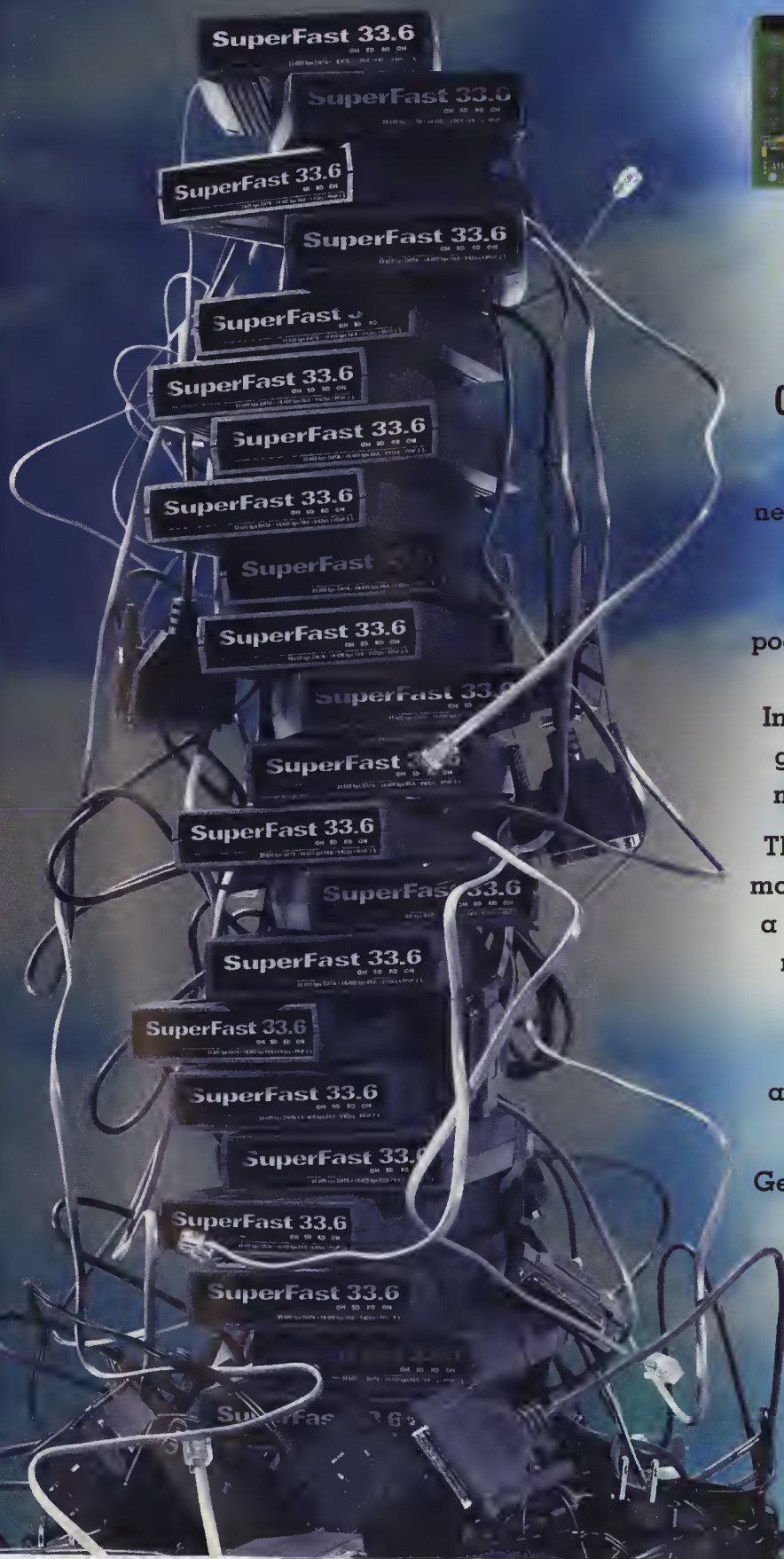
And we still have a personal computer industry, and in fact, there is still quite a market for game software for personal computers.

I think it is VERY likely that someone will develop more user friendly appliances that do, as part or most of their function, access the Internet. Will they be successful? Some will fail ignominiously while others could sell tens of millions of units. But they will affect most of the network and most of the personal computer industry to about the same degree Nintendo does - not so you could tell.

I think we'll see some form of TV set top box to access the web before Christmas. I think we could see a lot of things beyond that in the

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future. As I recall, someone connected a toaster to the Internet five or six years ago without a lot of impact. It was a joke, but an ironic joke.

I guess the bottom line is that I think they will exist, but I'm uninterested in them, and not likely to become more so. You could put your dishwasher on the Internet, but I'm unlikely to login to see how its doing. Similarly, without the ability to communicate usefully, print things out, adapt information, reuse it in various ways, and in general gain the use of an entire personal computer, it will be a limited application device and market that has little to do with what most of us are interested in.

Jack Rickard



LOCAL ACCESS QUESTION

Hi Jack

Not knowing where else to turn for this information I'd like to ask you about it.

I would like to know what service do ISP's like Netcom, concentric, etc. use for providing nation-wide local access numbers for their users and how I can start asking about the costs of this.

My instinct tells me it isn't x.25 because that's charged per hour and the service ISP's are using is flat (otherwise the costs would be passed down to the users!).

Can you please point me in the right direction as no one talks about this sort of thing? I need to find some information for a project proposal I'm putting together?

Thank you very much!

Alex Wieder
tcs@tao.agoron.com

Alex:

As so often happens, I may know the answer but I'm unsure I understand the question. But I think you are asking for a description of a national backbone service and how it works. I would refer you to our **Quarterly Directory of Internet Service Providers**. In addition to listing some 3000 Internet Service Providers, it also provides descriptions of every major national backbone service in the United States with maps, architectural descriptions, and lists of points-of-presence. It's \$9.95 plus \$4 s&h at 800-933-6038.

Basically, to create an Internet backbone, you locate facilities in the major cities you wish to serve. In that facility, you locate equipment, at the minimum a router. The routers in the various cities are linked by leased telephone lines that connect one port of one router to another port on another router in a different city.

The interconnection of these routers in different cities forms a logical network or backbone.

The leased telephone lines linking the routers in these cities are part of what is referred to as

the physical network layer. These lines are stock items leased from long distance telephone companies and are paid for at a flat monthly rate without regard to the traffic passing over the lines. They are generally priced by two factors: distance and capacity. Typically, backbone operators are using 45 Mbps leased lines to link between cities. These are usually referred to as T-3 lines, or perhaps more properly DS-3 (data service level 3). These can cost from \$5,000 to \$25,000 per month depending on distance.

Typically, once a backbone operator has a series of major metropolitan areas established with T-3 links connecting them, they will extend more local networks to outlying satellite cities and towns. Again, they usually locate a small facility, an office or often a collocation at a telco facility, where they place routers and equipment. These are typically connected to the "hub" city, again with leased lines - usually smaller capacity 1.544 Mbps T-1 lines. For example, you might establish a major hub city in Atlanta, and then extend to surrounding areas such as Macon, Marietta, etc. using T-1's or in some cases multiple T-1 lines.

Generally, at both the national hub cities and each satellite city, most operators setup both dialup and dedicated access equipment allowing them to in turn sell dedicated access lines to businesses and a series of modems allowing individuals to dial into that location and connect to the network. The total sum of these locations comprises the systems "points-of-presence."

In this way, you can dial into a POP in Marietta Georgia and access a modem that is networked with the router in Macon. It is connected to the router in Atlanta, which is connected to several other cities typically forming a network. Your computer sends data in a series of "packets" that have the destination IP address in the header. Each router that receives this packet passes it on to the next one in the route to that destination. The packets travel over these flat-rate leased lines.

In the event that the destination IP address is not part of the network, the packet is passed to a Network Access Point or NAP. There are four official NAPS in San Francisco, Chicago, Pennsauken, NJ, and Washington DC. There it is passed off to the proper network and routed through THAT backbone to its ultimate destination.

The result is that you can dial into any POP on your service providers network, and access the Internet. And yes, the charging mechanism is not only flat-rate, but increasingly so.

I hope this somewhat simplified explanation helps. Again, we provide much more detailed information in the quarterly directory.

Jack Rickard



QUESTION AND KUDOS

Read your mag for years as a BBS sysop.... kind of dropped it when you went mostly web. Now I find myself here again.... looking for info... How can I start a website on the cheap????

Can it be done with an open phone connection between my machine and the net, using the same or a second modem? Would appreciate any and all info you can provide... We are in the backwoods mountains of North Carolina... beautiful area, but very backwards computer-wise.... Thanks in advance...

Rick St. John
S & R Computer Solutions, Inc.
SANDR@CITCOM.NET

Rick:

You can start a web site on the cheap. There are two main strategies for doing so. The first is to run a web site on your own machine, and obtain a connection to the network through an Internet Service Provider. On your end, you can achieve reasonable success with almost any current PC hardware configuration. There is quite a bit of quite capable free software at this point. If you absolutely don't want to spend anything, I would recommend the RedHat distribution of the Linux operating system and the Apache web server software.

I don't know precisely what you mean by an "open" telephone connection. To be on the web you pretty much need to be there all the time, and that indicates a dedicated connection. A dedicated or standing 28.8 kbps dialup connection is about the lowest cost item available. The problem of course is that if anyone accesses your web site you've pretty much filled the pipe.

Increasingly, prospective web site operators are avoiding most of the headaches. The online community is splitting pretty much into content providers and access providers. So I might suggest a different strategy.

Many of the ISPs include a personal web site in the \$19.95 cost of a SLIP/PPP connection. And almost all will "host" your commercial web site on THEIR hardware, often for as little as \$50 per month. This has a couple of advantages. First, you don't need to worry about the connection. The ISP is already connected at T1 or often higher speeds - some at as high as 45 Mbps. Second, is you don't have to deal with the hardware and operating system. You access the ISP through your SLIP/PPP account and have full access to the HTML files that make up your web site. You can delete them, add to them, modify them, etc using a very inexpensive 28.8 kbps dialup connection. But when the rest of the world accesses your web site, they get the better 45 Mbps connection. The result is a much higher capacity and a better operating web site. The downside here is some loss of custom ability. Incorporating CGI scripts and JavaScripts etc. may have some limitation on the ISP hosting scenario. You lose a little bit of control, and gain a great deal of connectivity and capacity.

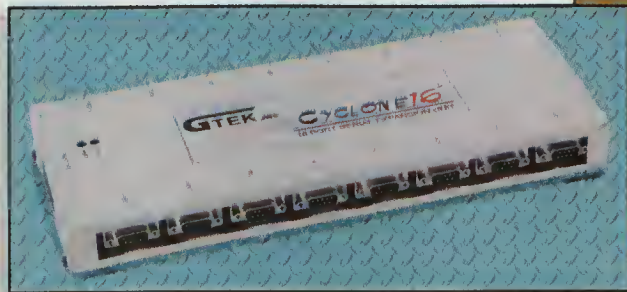
This strategy also requires a good working relationship with a professional Internet Service Provider. Some of these services are truly great operations. Others have endless ways to try to milk another \$4 per month out of you by placing various restrictions on what

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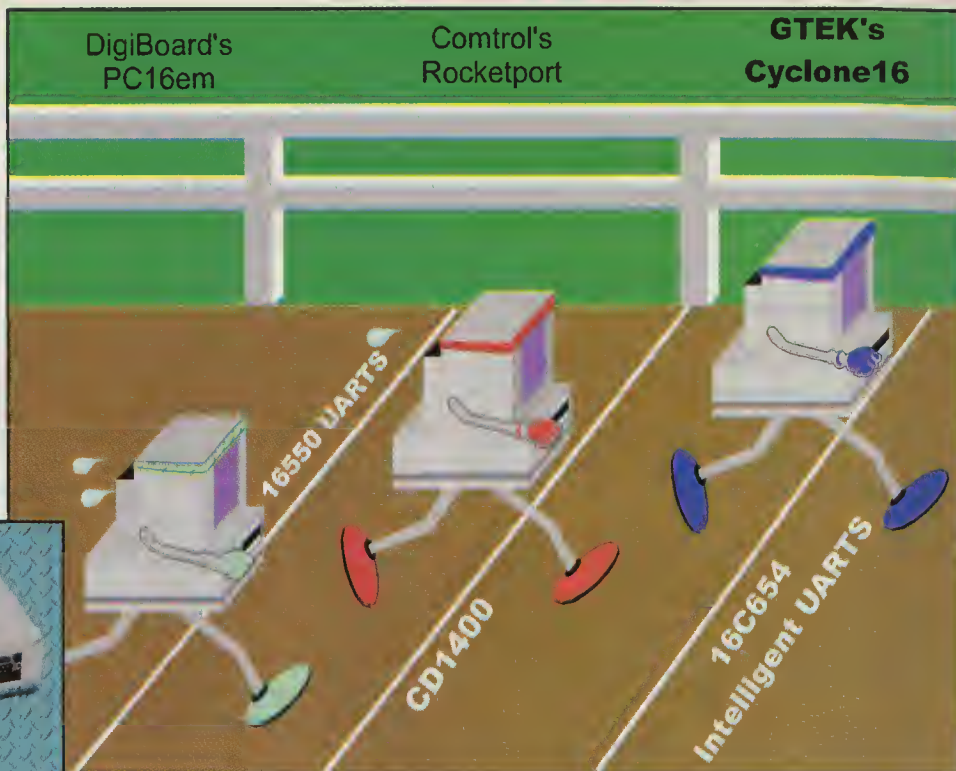
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you have, how much of it you have, etc. Disagreements and fallouts between ISPs and web operators who host on the ISP's site are unfortunately terribly common.

Good luck.

Jack Rickard



SEPTEMBER ISSUE

I followed the instructions in your September issue of Boardwatch in Babb's Bookmarks, Internet People Finders, and connected with the American Information Network's database at <http://www.amerli.com/sherlock/sherlock.htm>.

For \$20 per search received only address history for myself and my husband. We wanted to get the information you cited in your magazine on page 34 where you state AIN "provides access to federal, state and county level criminal records; civil case records; consumer public filings (bankruptcies, tax liens, judgments) and credit reports, workman's compensation records, professional license records and even education verifications.

I think you need to verify the information you publish prior to printing. I feel cheated—I already knew where my husband and I have lived over the last 20 years, and didn't need to pay \$40 for that information.

Diane Kopple
DKOPPLE@aol.com

Dianne:

I suppose we have been through this sufficiently often to know better. Actually we don't have any problem at all verifying the information we publish PRIOR to printing. We have a little bit of a problem with our readers verifying it AFTER we publish it.

There is a very interesting friction between people who want to know things, and people who don't want things known. Since we've BEEN in publication, there is rarely a month goes by without someone coming up with the idea of putting such information online, allowing searches, and collecting a fee.

And it is very rare for this to happen without a strong protest from those who don't WANT their drivers license information, civil case records, etc made available. So a huge outcry erupts, and the service usually disappears.

In most cases, it is publicly available information. It isn't private. It is known. And almost anyone can get it that wants it. The outrage seems to center on it being EASY to get, and so available to a wider body of people than those who normally have access to it.

In any event, it's a bit of a war, with accompanying high emotions on all sides. I rather suspect you got caught in the crossfire and the service we described has had to make dramatic changes as the result of protest

from those interested in privacy issues. I would think the operator would refund your \$40 though.

Jack Rickard



LETTERS COLUMN

Jack,

What more proof does the world need that you *are* a genius? Your answer to another "Bill" in September's Letters' Column says it all: "A bit of HTML design, a touch of CGI, half-cup of ISP gossip, sprinkle with browser review, and add a debate about the origins of Caesar salad. Presto - a **Boardwatch Magazine**. I love publishing."

Keep givin' it to 'em, Jack; I love it!

Regards,

Bill Irvine
wji@islandnet.com
<http://www.islandnet.com/~wji/wji.html>

Bill:

I was unaware the world was looking for proof. All they had to do was ask. I've never suffered from the ignominious agonies of false modesty. In any event, I'm very pleased you find our efforts of merit. We'll continue while breath remains.

Jack Rickard



SUBJECT: RE: WEB SERVERS

Greetings Michael,

I really enjoy reading your insightful articles about Web servers. I run a business developing and designing web pages for area businesses (isn't everyone?!). For the first few months of the business, my partner and I were renting space and obtaining virtual domains for our customers. Now, we have been looking to buy our own server and co-locate it with an ISP in Washington.

We have looked at all sorts of systems, servers, and have read many of your reviews. We have looked at the following systems:

1. Sun Sparc w/ Solaris
2. Pentium Pro w/ BSD or Linux
3. Pentium Pro w/ Windows NT
4. Apple PowerPC 7250

We have also looked into many different servers for each platform. Through our decision making process, we have eliminated number 1 and 2. I enjoy UNIX and the powers of UNIX, but we really don't want to spend all the time we need to become very efficient at administering a UNIX box. If we grow more in the future, we might decide to buy a UNIX box and hire a guru to admin the box for us.

That has left us with the last two. We are interesting in NT since we use Windows 95

and are familiar with Intel based systems. The only thing is, we have not seen any excellent attributes to the Windows NT system. Also, we would have to spend some time learning more about NT.

Finally, we are deeply considering the Apple PowerPC 7250. This box has been optimized to run as a Web server. The system comes with a bundled CD full of Web software. The server is WebSTAR from Starnine (Quarterdeck), Adobe Pagemill, MacDNS, ServerStat, RealAudio Server, etc. This seems to be a turnkey solution for us. More information on the software that comes with this box is at <http://www.solutions.apple.com/products/AISS/AISSpl.html> and information about the box itself is available from <http://www.solutions.apple.com/papers/inetguide/text/aiss.html>.

We were wondering if you have looked into the Apple box and if you had any pros and cons on it. Essentially, we just want an easy to use, dependable and secure system to run a Web server utilizing CGI and Java. We really value your expertise in Boardwatch magazine and was hoping to get some of your input. Thanks.

Regards,

Shahram Esfahani
Net 4 Productions
sham@ne4now.com
<http://www.net4now.com>

Hi Shahram,

Since Options 1 & 2 are out of the picture, and you state that you need some more experience with NT, that leaves you with Option 4, by my count.

What you fail to answer is: Do you know anything about Apple and their Operating System? If not, go back to Option 3. Rule of Thumb about people and their choice of system: PC = Left Brain, Apple = Right Brain. If you are a right brained person, go with Apple.

Another thing, I know it is a turnkey box, which is great. But don't overwhelm yourself all at once. Bring each layer up when you can handle it.

You might also want to consider what the support in your area is for each option you listed.

As for looking at the Apple PowerPC WebServer, no I haven't been able to get a review box. I promised Bill Gram-Reefer at ISPCON that I will pursue it. Now, if anyone at Apple is listening... <insert MAJOR hint here>

I hope this helps Shahram..

Michael Erwin
Boardwatch Magazine





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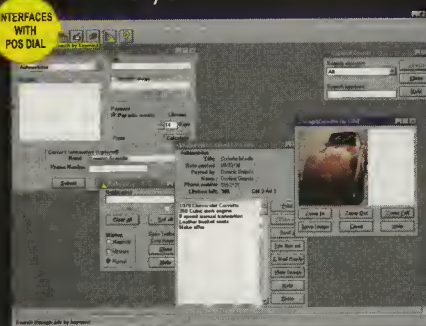
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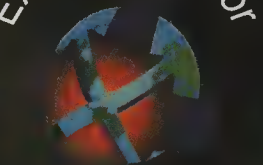
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FRAME RELAY NOTES

Mr. Rickard,

I thought I might take a moment to expand on your comments on Frame Relay vs. T1s and other dedicated lines. I read your article on ISPs on the Boardwatch site.

I am somewhat of an expert on Frame Relay and ATM (not self-proclaimed). I worked on these technologies for three years at Bell Laboratories. Currently, I am a consultant to MCI.

It is true that Frame Relay is at most AS efficient at a T1 connection or less efficient. It is also true that for a multipoint, mesh network, it is much less expensive. The cost versus the amount of usage is much more efficient than a T1. It is more difficult to transmit voice and video or Frame Relay with PVCs but still possible with special equipment. Also, Frame Relay will soon have available a SVC technology making time and sequence sensitive usage more practical.

However, it is important when saying that Frame Relay is less efficient that it depends on the service provider. Some providers like AT&T guarantee a performance level (Committed Information Rate or CIR) for a price. You can order the service for 1Mbit bandwidth with a 512K CIR. Then, whenever you want it, you will get AT LEAST 512Kbits throughput even when the network is very busy. However, if the network is not very busy, you can get between 512K and 1Mbit throughput. Therefore, it is a scaleable bandwidth technology that lets the customer decide how much guaranteed throughput they need and are willing to pay for. In all cases though, the service is cheaper than dedicated lines.

If you would like to discuss this issue further feel free to contact me at: park@america.net.. Not at the address from which this e-mail was sent.

Thanks,

Park Foreman
park@america.net
<http://www.america.net/~park>

Park:

I appreciate the knowledgeable comments regarding Frame Relay/dedicated line. But I'm not certain I get the point. In general, frame relay is less expensive, and less efficient. But if I understand what you are saying, Frame Relay can be more efficient than we are accustomed to thinking of it - if we want to pay more for it through a Committed Information Rate.

It sounds like a not very new variant of "you get what you pay for."

Despite some serious concerns about performance and increasing customer demands for a not actually available "clear channel", I'm seeing very impressive growth in Frame Relay

at all levels - even among Internet Service Providers in some cases at the backbone level itself. It's a remarkable innovation and received a John C. Dvorak Award for Technical Excellence at our Internet Service Provider convention this past August. We like it lots. But we do need to explain it, and in general, it is a bit less efficient technically than a leased line, and correspondingly a bit less costly as well. A case could be made that the forfeited efficiency is small in relation to the cost savings, this being a function of technical improvements in frame relay and very much dependent on what the going price is. But broadly, what we said appears to remain true.

Jack Rickard



help, Help, HELP ME...!

Jack,

Since I last wrote, I broke down and bought the Galacticom Advanced Internet Option—and connected to the Internet through the provider "Earthlink".

I decided to stay with G'comm as their new products SEEM to be RUSHING away from the proprietary nature that I was concerned about in my last post—but that is not yet fully proved-out to my satisfaction for my blanket endorsement.

I also have several "outstanding issues" with G'comm, but was VERY impressed that when I asked for the President, Scott Brinker, I was connected DIRECTLY to his phone. No fuss, no bother. No teams of "customer diversion" experts....

This high level of access "stayed true", when, after I had told my story (first to him, then to his "right hand girl")—I was (without fuss) and with equal matter-of-factness, connected to the CEO, Bob Shaw!

BUT..., while waiting to see how well things DO go with G'comm, I am dealing with difficulties re: my Earthlink 24-hour dial-up connection that makes my service available on the net as "bryx.com".

During the recent "West Coast Power Outage" I lost my connection to Earthlink—and more importantly, so did my Online "Members". The connection was lost TO THE MINUTE of the outage (I had stable power at my location and six hours of backup that has been expanded to 72 hours....)

The modem kept re-dialing to Earthlink's "unanswering modem" for a period of 8-16 hours before finally re-establishing connection....

The next day I called Earthlink and was (ultimately) informed that they are only backed up for 2-3 hours!

As an Electronics Engineer whose (one of many) specialties included Components, Safety, and Reliability Engineering, I have taken Disaster Management courses...the industry standard taught being a MINIMUM

of 72 hours of un-supported operation for communications and mission-critical computer systems.

(I recently re-confirmed this with a friend involved in linking multiple hospital systems in the Boston area, with similar knowledge....)

I don't think Earthlink is going to be able to support me to (what I consider) these industry standards, and was hoping that you have information you can share on providers that can/will.

Further, while Earthlink allowed me (as Sysop) to use outbound Internet access, they said they would deny me service if I allowed other users the same: I was not allowed to resell ANY of their service—regardless of how limited or extensive the resale would be.

I am also hoping that you could provide information on vendors that are not so restrictive in their policies. Given the fact that I only have a 28.8 dial-up connection, I do NOT intend to try to cram any significant service down this line, but **DO** chafe at these limitations.

They also gave me the more typical "The President isn't in—can I help you?" in contrast to my G'comm experience.

I **DID** choose Earthlink for their reputation of having adequate system bandwidth, and would also be looking for that in another supplier.

Any suggestions? ...Or perhaps merely suggestions of HOW to efficiently look?

Yours Online,
Gregg Strom
sysop@bryx.com
BRYX International
Internet: bryx.com
modem: 500-679-BRYX [-2799] or 310-65-BRYX-3 [652-7993]

Gregg:

You're encountering an old problem I thought was solved. Early ISPs wanted to sell to end users. Unfortunately, end users also wanted to sell to end users. So many ISPs created contractual clauses limiting that. As part of a competitive environment, most of that has gone away thankfully and today we are seeing multiple backbone operators such as Good.NET, CWIX, AGIS, and others specifically focusing on Internet Service Providers as their market.

I find it doubly ironic that your problem in offering some modest service is thwarted by Earthlink. Earthlink is itself nothing more than a reseller. They purchase facilities from a national backbone operator and then simply provide the marketing and customer support function to offer dialup access.

So dump them and get someone else. I cannot answer who would be the best to go to, as it varies tremendously depending on your locale and needs. But we do publish a quarterly

WHAT DO LOCKHEED AND THE WEATHER CHANNEL HAVE IN COMMON?

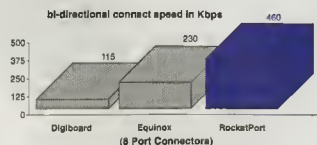


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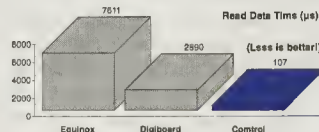
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directory of Internet Service Providers. In the current Fall 1996 issue, we describe virtually every major national backbone operator and almost all of the smaller ISPs as well.

Many of the nationals and some of the local operators insist that they have 24X7 network operations centers and full power backup systems. In shopping, I would ask rather pointed questions about that as some of it seems to be a bit of puffery, some of it is planned for the future and claimed now, and some of them actually have this stuff.

Jack Rickard



THE MOMMY TEST

Read with interest your "mommy test" article (my mom's on AOL and I have communicated with her more by email in the last year, than I did in the previous 11 by phone).

1. Having done the Winsock thing myself in the past, when I recently moved I said screw it and I just got AT+T's disks. Made things a whole lot easier, frankly. (Plus: 24 hour tech support, no kidding).
2. While I guess I'd acknowledge your reasons for dumping the Mac column, the nagging thought keeps occurring to me that to the extent that Macs have traditionally less problematic (perhaps up to and including ISP configuration), it would seem a shame to discontinue coverage of part of the computer world partly, perhaps this was a reason, because there are fewer problems to cover. This is on top of the steady stream of Mac appearances not only in movies but in the articles and comments of seemingly productive people. I'm PC since my first in '89, but often I've felt I'm in a commercial advertising the nonsense that you go through with a PC.
3. Enjoyed last month's article on the apparent Cisco router problem. In light of your comments that there probably wouldn't be a net overload problem, what with the rate of increase of capacity, my thoughts kept turning to whether or not you might have been in error. This is particularly in light of the question of point to point phone calls via the net and in light of the massive info in multimedia transfer. Sort of a "if you build the capacity, they will fill it" argument.

"Matt Murdoch"

murdoch@worldnet.att.net
San Diego

Matt:

Sure, we would all be better people if we would just use Macs. But we're human beings, given to the frailties and temptations attendant withall. I have sinned. I use a PC.

With regards to the network, of course I might have been in error. It's not likely, but it could happen. My comments were primarily regarding the overall issue of bandwidth and where we were headed with voice, video, and other high bandwidth hogging applications.

My point was, and is, that there were no technological barriers to bandwidth itself. The high-level engineering/science seems to be thoroughly completed to support Terrabit switches and in fact they have working prototypes. Nobody NEEDS bandwidth at the level already developed sufficiently to motivate them to pay for it. There is no immediate ceiling facing the Internet.

Of a more immediate concern is the topic of deployed backbone bandwidth. Again, I have publicly stated that I don't think the problems are inherent at the core with regards to the passing of packets. And the current slowness of the Internet is largely a SERVER issue complicated by some basic architectural issues regarding how the network is run that themselves seem to be server oriented.

We have a couple of real problems - most long predicted. First, there now exists some 35,000 subnets in the network and management and performance with regards to routing table updates is an issue. Second, the domain name server system is under considerable strain. Finally, the vast majority of "slowness" encountered by users and observed by them has little to do with packet loss in the network, and everything to do with the resources at the server end. I'm pretty certain this is the case as I can target different servers and get very different responses even when they are located in the same geographic area and use precisely the same connections to a backbone not my own. I can duplicate this feat on a number of backbones.

With regards to Internet performance, everyone points the finger at someone else. The web server operators point at the backbones as having unacceptable packet loss at the core. There is packet loss at the core. And an end user would be hard pressed to detect or measure it. The backbone operators point to small ISPs who "don't know how to run a network" and have grossly oversubscribed/oversold THEIR connection. We are currently gathering data from ISPs on the number of dialup ports and the bandwidth to the network. Many are trying to tell us this is proprietary data, and are just generally hiding under the vague suspicion that they ARE getting away with something. So far, the data we do have seems to suggest otherwise. It does NOT appear to be a problem of small ISPs oversubscribing Internet service. In fact, what is emerging is BETTER ratios as you get farther out on the fringe size-wise.

What IS emerging is that if you run a web site on a 133 MHz NT machine with a T-1 connection and attract any attention at all, you will look for all the world like a very, very slow part of a very very slow Internet. And if you are running on anything less, it reaches comical proportions. The problem appears to be in the "last inch" of the Internet - between the CPU and hard disk drive of a web server. And we are seeing an unbelievable influx of thousands of new web design consultants, web marketing consultants, and other novices who haven't a clue that this is a problem and no technical background to detect it if it is real. Incredibly, they brag and bray outright that they are non-technical people and if these

technoids would just get out of the way they could make some money and make the web safe for normal people. It is toretch.

So while there are some complex management issues, and some peculiar technical issues revolving around route management and some of the "heart of the net" type servers for domain lookups etc., there is no shortage of bandwidth and the Internet is not about to collapse. We are actually building new and additional backbones at an almost alarming rate. We published 9 major backbone players in July and in October it appears we have 13 with at least 3 "borderline" backbones too close to call.

But the ability for everyone to land on the same server at the same time and view the same web page simultaneously is leading to some extraordinary traffic jams that are becoming routine rather than exceptional.

Jack Rickard



INTERNATIONAL LINKS

Hi there...

I have a bet that I am trying to resolve... I was reading an article you wrote and it sounded that you may know more about this.

The question resides around international connections:

Who wholly owns and operates the physical fiber that connect MAE-WEST and Japan?

If you have any insight to this, please let me know.

Thanks,
Jon Prall
Dir, Net Ops, Excite.
jprall@excite.com
415 943 1222

John:

I don't really know. But here, I'll make something up. It probably runs on TPC-4. AT&T is the largest investor in this trans-pacific cable but like almost all trans-oceanic cable projects, it is actually held by a consortium. TPC-4 was one of the most expensive cable projects and as such is also funded by one of the largest consortiums - in this case some 49 telcos from 34 countries. For more on TPC-4, see <http://www.att.com/press/1192/921119.cia.html>.

KDD of Japan is developing an enormous cable project to link the U.S. and Japan - 115,000 fiber circuits I believe. This will be TPC-5 this year.

As to MAE-WEST and Fiber to Japan, both will be moot soon if it isn't already. The link between Japan and the U.S. from MAE-WEST either is, or soon will be by satellite - not fiber at all. See <http://nsn.net/gateway.html>.

So the answer is that no one wholly owns the fiber connecting MAE-WEST to Japan.

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Further, and I suspect this is already in effect, it isn't connected by fiber but rather by satellite. IF it isn't, it will be so shortly.

Why would anyone care who owns the physical layer?

Jack Rickard



DOMAIN NAMES HAVE VALUE

I enjoyed your article on the current crisis in Domain Names but was amazed that you did not mention or assess the role that public recycling or sale of Domain Names such as at www.BestDomains.com

This Web site is about 3 months old and already hosts over 1200 Domain Names for sale, with about 200 added every week.

Although the sale or re-sale of Domain Names will not solve the problems we face in the Internet Growth that is predicted, it does give a very good option to new companies coming on the Web and requiring a quality URL.

The facts as you even mentioned in your article that Domain Names do have value, is an aspect that very few ever predicted and as you may know most of the trading in Domain Names to date has been kept very quiet, one of BestDomains.com goals is to "legitimize" and document the process somewhat so there is at least some value history to measure by ..

David Milligan
mostlly@harmless.com

David:

You are amazed in October that we did not mention in our October issue a web site that is about three months old? How could we have missed it?

That domain names have value is an aspect that very few predicted? Where have you been? Predicting the value of domain names started in late 1988, about the same time the domain name system went online in a production way. The Internet intelligentsia at the time honestly believed the legal system wouldn't get involved and so whoever got the domain names first would "own" them, even if they were someone else's trademark, and could then sell them to the big corporations for huge sums. It's like every technoids dream viewed from a child-mind state. And it not only isn't new, but it's one of the oldest conversations in the network.

An online market in domain names sounds like an interesting idea. But I would be much more curious to learn how many have been SOLD this way through your service than I would in how many you add each week that are FOR SALE.

Good luck with your concept

Jack Rickard



PERSEVERANCE....

I've been buying **Boardwatch** for several years and actually subscribed this year. The

urge to tell you how great your mag is finally got to me and I thought I'd send a few of my thoughts in also.

I grew from a bbs running wildcat 3.9 with 2 lines to an Internet provider with 32 lines (so far) with the help of **Boardwatch** and the great articles. I still flirt with the idea of an online BBS to simplify things and get my local users involved with each other but I'm still learning the unix game (bsd1 2.1) and until Mustang releases a version with ppp in it I'm staying out of that game.

I just want those thinking of jumping into the water to know what they need to do to succeed (IMHO). I've narrowed it down to 3 points.

1. Service, Service, Service. If you're in a smallish town with not too far to go, set your customers computers up for them for Internet usage. Charge for your or your installers time but it takes less time to drive over and put Internet Explorer and a dialer on their computer than to walk them through it. If somebody has an email problem take care of it then. If they need you to enter in the email server name because they don't understand win95 then so be it.

2. Don't skimp on software and hardware. Don't skimp and try and save a couple bucks on cheap modems, barely enough memory, computer boards and com ports. Study the ads, call and ask questions, figure out what you can do and afford and do it. Buy more modems than you think you'll need. Your users will thank you and their friends will hear how great it is to get online with no busy signals. Buy the next bigger size of dedicated line you think you need. You'll need it sooner rather than later.

3. Be a hardass to your phone company. Believe it or not, these people are actually supposed to install these lines when you want, make them work and label them accordingly. I've had bell out 5 times over 3 months because the first time they came they installed lines but didn't even label the numbers on the interface. Then they numbered them wrong, etc etc... You're a big user to them for the trouble they have to go through. Get them to give you good service.

Enough soapbox. Thanks for 3 great years of helpful mags and may fortune follow you.

Victor Hirst
vhirst@pitton.com
Pittsburg Online
Pittsburg, KS

Victor:

I rather think the subject of your message more important to success than your three points, but I do think you've touched on issues close to the heart of all ISP's. Dealing with customer service, hardware/software deployment, and the physical network infrastructure are all headaches that make the world go round for Internet Service Providers.

I wish you the very best of fortune with yours.

Jack Rickard

BOARDWATCH MAGAZINE

We received a complementary copy of **Boardwatch** magazine a month or two ago. I never considered it as much of a resource before then. After reading your article on BSDI and Apache, which I am almost fanatical over, I was sold. I just finished this months article on Publishing on the Web, and enjoyed it. Didn't find any security holes, but did run around the system looking at file and directory permissions, ownerships, and knocking on a few firmly locked virtual doors.

It is a treat to find UNIX related material that is informative and well written.

Well done, and Thanks.

David A. Flanigan
entropy@newreach.net
Systems Administrator
NewReach Communications Inc.

Hi Dave,

Thanks for the great comments..

Mucho Gracious...

Michael Erwin



GREETINGS

Jack,

I always look forward to reading your editorials, for I find them often witty and insightful. However, in the August issue, I found yet another surprise...

I too grew up on Cape Girardeau and have lamented the lack of most anything online when I visit there. But, they do have a Prodigy connect locally. (rolls eyes)

I actually don't get back there too often, but..when I do I always wonder why Cape hasn't really grown much more than it has.

Oh well, sorry to prattle on....one more person from Cape...wow. Now I can forget that Rush is from there <wink>

Take care. Thanks for a quality magazine that continually teaches me something new each time I peruse it.

Joel Godwin

Joel:

There are many more of us FROM Cape than there are IN Cape. I think it has ever been so, perhaps not so much so, but so nonetheless.

We're pleased to report Cape Girardeau is in fact ably served by an Internet Service Provider and we've added them to our directory.

Jack Rickard

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TECHNOLOGY FRONT

by Jim Thompson
Western News Service

PAUL MACE'S EXPO BRINGS MULTIMEDIA TO WEB SITES

Paul Mace was long known for his PC utility programs which included data protection along with disaster prevention and recovery — all under the banner of *Mace Utilities*. Since 1989, when the Mace Utilities were sold to Fifth Generation Systems, Paul Mace Software has been actively involved in the multimedia authoring tools (graphics/animation) market.

Expo will allow you to bring animation and special effects to the World Wide Web; however, it is not a Web authoring tool. It is also “not based on Java or VRML.” It is also not a language to rival C++ nor does it pretend to be. Expo is a development tool for those who want to quickly develop applications but don't have the time, energy or interest to master Windows APIs or to “engage in system level, object-oriented programming with traditional tools such as Visual Basic, C++, Java or VRML.” It is designed to be easy to learn and provide “good performance” on 28.8 connections.

WIZARDS HELP WITH LEARNING CURVE

The built-in Wizards do make learning the program somewhat easy. The language is straightforward, using clear, easy-to-understand commands. But, this is still programming and does require a basic knowledge and understanding of programming. If you have never done any programming, you may find some difficulty with Expo and you should expect a learning curve. However, if you have programmed in “C” or even have a firm, working knowledge of Basic, you should be able to learn Expo quickly.

According to Paul Mace Software, “Expo consists of an editor built around the ‘G’ scripting language” along with a set of visual tools which allow for script creation via point-and-click and drag-and-drop operations.



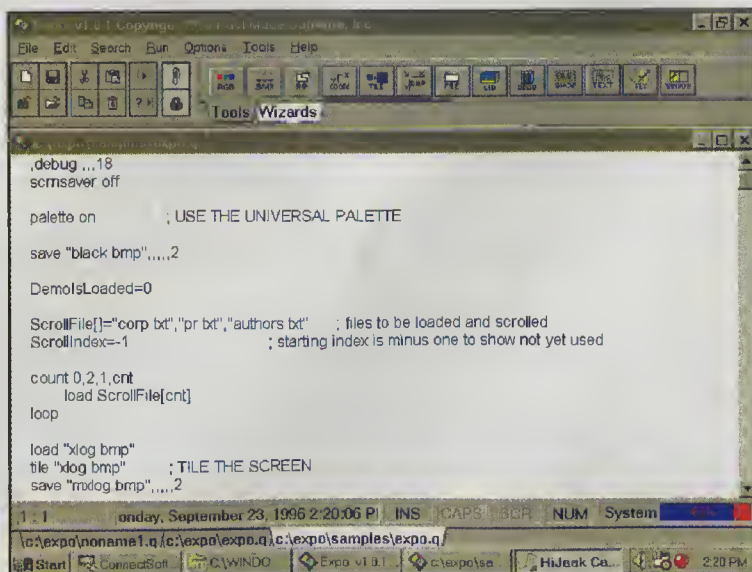
*The fastest way to write MULTIMEDIA
applications for WINDOWS
and the INTERNET.*

Many recall Paul's first graphics animation effort, called GRASP — a DOS program that provided tools for creating basic animation projects. Now, ten years later, Paul Mace Software has introduced its latest multimedia authoring tool called *Expo*.

INTERNET ANIMATION

This new product provides an “authoring environment” for the development of interactive, graphical presentations for Microsoft Windows. The presentations can be run locally or over the Internet or any TCP/IP network.

“Expo enables people to develop multimedia presentations that can run over the Internet. Using Wizards, even beginners will be able to create interactive Internet applications such as a business slide show or interactive book. For professional programmers, Expo offers the ‘G’ programming language and Expo Development Environment with full-featured editing, built-in debugging and context-sensitive help,” said Paul Mace.



*Expo's scripting language editor extensively uses
drag-and-drop tools*

Jim Thompson is
Managing Editor of
Western News
Service in Los
Angeles, California.
CompuServe:
72777,2677, MCI Mail:
321-4127, mailto:
jim.thompson
@wnsnews.com

The Expo Editor allows you to create your program (either using the help of Wizards or on your own) and immediately test the result. There is also a set of tools that "automate" common operations like picture placement, font selection, creation and placement of transparent windows, or text placement or rotation.

Context-sensitive help is available along with a "built-in low-level debugger with code-trace and variable watch windows."

All Expo programs can be run over the Internet and/or TCP/IP networks. Presentations are written exactly the same whether they are destined for the Internet or are to be run locally under Windows. The only difference is the addition of a single NET command which instructs the program where to go on the Internet (i.e. NET "boardwatch.com", "anonymous", "guest").

To display or show an Expo presentation over the Internet, the source must be placed on an FTP server. In order to see the presentation, a caller to your Web site needs to install a viewer which is available at no charge and is approximately 300-Kb in size, and then configure their browser.

File support under Expo includes .BMP, .FLC, .AVI, .WAV, .MID, and .TXT. According to Mace Software, "MPEG files are supported through the MCI interface. All other picture formats can be converted from the Expo Editor. Anything that is controlled through the MCI interface can be controlled from Expo."

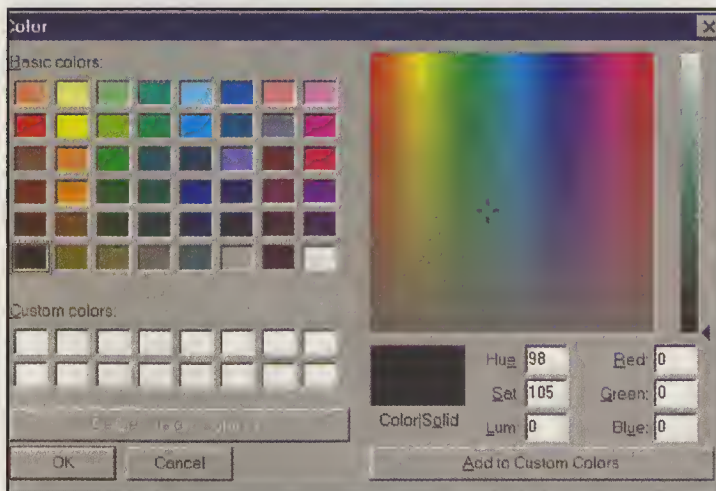
MCI (Media Control Interface) is a "high-level" command interface to multimedia devices and resource files which provides applications with device-independent capabilities for controlling audio and visual peripherals. Applications created under Expo can use MCI to control any supported multimedia device, including audio playback and recording.

MCI provides standard commands for playing multimedia devices and recording multimedia resource files. Using MCI, an application can control multimedia devices using simple commands like open, play, and close. MCI commands are a generic interface to multimedia devices.

ADDITIONAL TOOLS

There is also a file conversion feature within the Expo Editor that allows bitmap format images to be converted

to the .BMP format. Expo also offers compression to compensate for what Mace calls the "inefficient storage of the .BMP format."



24-bit colors are easily customized

A program called **Librarian** lets you collect all your resources into a single project file. This can then be compressed and included in a single .ELI file for redistribution. The "G" Language supports 24-bit color. The actual palette depth displayed is dependent on the user's video hardware. Expo also has what Mace Software calls an "orthonormal" palette command. This allows, "pictures created with different palettes and color resolutions to be displayed simultaneously on screen without adversely affecting each other." All images are mapped to a universal palette.

Expo will run under Microsoft Windows 3.1, 3.11, Windows95 and WindowsNT (through 4.0). It will access all available memory including XMS and Virtual memory.

Once your presentation is complete, you can use the MakSetup program provided with Expo to create distribution/installation diskettes. MakSetup creates installation files and disks for Expo presentations, screensavers, source code, and other demos and material.

All files are archived together and optionally compressed to a single Setup runtime. An optional uninstallation program can also be added to the distribution.

Multiple subdirectories, disk spanning, Program Manager groups, file associations, automatic display or running of files after installation, and other popular installation features are supported, and optimized for the final Expo applications.

CONCLUSIONS

While easier than most "programming" languages to learn and use, Expo is still programming and may be a bit daunting for those who have never ventured into this arena before. The Wizards do help, but don't expect to be creating multimedia presentations immediately.

The experienced programmer, however, should find Expo easy to master. Programmers will also find a lot of nice features

that allow for the quick and easy creation of presentations. As noted, Expo will not replace or even rival C++ so many may find it lacking in a number of areas.

Expo really falls into an area that is between what the novice needs and what may be useful for the experienced programmer. I found Expo to be easy to use. Within a few hours of installing it, I had written a program that included animation, sound, graphics and even a video clip. Of course, your mileage may vary if you have not done much programming.

Paul Mace built his reputation on creating solid programs that deliver on their promises. Expo is no exception. If you are looking for a quick, easy way to provide an interesting and fun interface for your Web site, a screen saver or other Windows program, Expo is an excellent choice. ♦

CONTACT INFORMATION

EXPO

- Paul Mace Software, Inc.
- 400 Williamson Way
- Ashland, Oregon 97520
- (800) 944-0191 or (541) 488-2322
- <http://www.pmac.com>
- COST: \$399.00



56 KBPS MODEMS COMING

A new approach to modem design promises downstream speeds of 56 Kbps over ordinary phone lines, with upstream speeds of about 30 Kbps. The trick is that only the connection from one of the modems to the telephone company central office can be analog, but that's not much of a problem in this increasingly digital age. Most telco networks are all-digital now, and most Internet Service Providers' modem pools have digital connections to their telcos, so only the leg from dial-up user to CO is still analog. The new "V.56" modem conditions or "equalizes" this analog segment to permit finer sampling of the signal than is performed on noisy all-analog lines - 8,000 samples per second. With 8 bits per sample, the theoretical speed limit becomes 64 Kbps, but irreducible network flaws limit the real-world expectations to 56 Kbps.

Rockwell International has posted a densely technical white paper on the "V.56" technology at http://www.nbrackwell.com/mcd/56kmodem/56k_wp.html and will demonstrate its version of 56 Kbps modems at Comdex/Fall, November 18-21 in Las Vegas. US Robotics, Motorola and Lucent Technologies are reportedly working on competing - and incompatible - 56 Kbps modem chipsets. Hayes, Amquest and a host of other modem makers are feverishly at work on consumer products, which are expected to sell for less than \$250.

Inexpensive 56 Kbps modems that use ordinary phone lines will be great for ISPs, consumers and modem makers. Telcos pushing overpriced 56 Kbps dedicated and ISDN lines may have less reason to rejoice, as will vendors of ISDN terminal adapters and related hardware. But pushing the analog speed limit has its inconveniences - failure to connect at maximum speed, long handshaking times - so the all-digital connection will continue to gain favor with well-heeled consumers.

PAC BELL PACKS IN 51,000 INTERNET SUBSCRIBERS

Pacific Bell Internet Services signed up more than 51,000 home and small business SLIP/PPP subscribers in the first three months of its debut as an Internet Service Provider. The company seems to be doing it right, with 24x7 customer support, flexible and nearly flat-rate pricing (\$14.95 per month for the first 20 hours with a maximum of \$19.95 per month), prompt fulfillment for software requests (average 4 days) and plenty of capacity - 99.99 percent of callers connect on the first attempt. Customers can have Internet use itemized on their phone bills, another good way to painlessly separate people from their money. Of course, it doesn't hurt when your market - California - leads the nation in consumer computer ownership (47 percent) and existing online accounts (11 percent). Pacific Bell Internet: <http://www.pacbell.net>, <mailto:internet-info@pacbell.net> or (800)708-4638.

ISP, WEB CHARGES CAN APPEAR ON CUSTOMER'S PHONE BILL

Most people tend to pay their phone bills, and pretty promptly. Now independent ISPs can have their charges added to the bill that gets paid first. NetGAINS™, a new service from three-year-old Federal Transtel Inc. (FTT), tracks and charges Internet-derived revenues in a variety of ways. Daily, weekly, monthly or yearly subscriptions and/or per-transaction charges are possible. Web sites can bill software or magazine subscriptions to buyers' phone bills. The company keeps about 10 percent of revenues collected. FTT, named the "10th Hottest Small Business in America" by *Entrepreneur* magazine, provides billing and collection services for pay-per-call services, 900 phone services, calling cards and point-to-point data lines. Now they've applied their expertise to the Internet. FTT: <http://www.fttnet.com>, (800)933-6600

CERFNET, TRANCELL OFFER ONE-STOP NET CONNECTION

Small businesses can now connect their LANs to the Internet with one call for under \$1,000 including Trancell's WebRamp 1x8 router, which features a builtin 8-port IP or IPX Ethernet hub and Windows Wizard-driven installation software. That takes care of the hardware end. CERFnet provides the ISDN Internet connection with its Small Business Advantage service: 128 Kbps connection, 16 IP addresses, up to 99 hours per month, 5 e-mail accounts, 5 Mb of Web space, DNS and newsfeed service for \$149 per month. The two firms' joint marketing agreement eliminates the need to deal with multiple vendors. CERFnet: <http://www.cerf.net>, (800) 876-2373 or (619) 455-3900 voice. Trancell: <http://www.trancell.com>, (888)932-7267 or (408)988-5353 voice.

WEB REVIEW RESURRECTED

"The summer's most often-buried Web corpse" (according to columnist Kristen Alexander) is alive and kicking at <http://www.webreview.com>. Ripples of dismay raced through the online publishing industry last May when Songline Studios pulled the plug on *Web Review*, one of the sharpest and most informative Web-only publications ever attempted. Advertising revenues just didn't come together, according to president Dale Dougherty. But salvation arrived in the form of Miller Freeman, Inc., publisher of the print-only *Web Techniques* magazine. "Miller Freeman approached us with new marketing and advertising resources that could help us better reach our audience," explained Dougherty. M-F was attracted by *Web Review's* widespread though short-lived reputation among Web site developers. Eric Faurot, director of Miller Freeman's Web Design and Development conference, saw the online publication as an extension of his week-long event and a way to drive Web designers to his conference site. With a print magazine and a conference behind it, the online *Web Review* got a new lease on life. Welcome back, folks!

EASYRADIUS: SECURE REMOTE ACCESS FOR WINDOWS NT

RADIUS - Remote Access Dial In User Service - is a protocol for managing security, authorization and

accounting of remote access to LANs, including servers run by Internet Service Providers. Invented by Livingston Enterprises (<http://www.livingston.com>), RADIUS has been well received by remote access device makers including Shiva Corp., Whittaker Xyplex and Bay Networks. The protocol may soon be elevated to an Internet standard; see <ftp://ds.inter nic.net/internet-drafts/draft-ietf-radius-radius-05.txt> for the Internet Draft that details RADIUS' current status.

Until recently, RADIUS was available only on Unix servers, forcing many sysadmins to learn and maintain multiple operating systems. The **Easy-RADIUS** server, priced at \$3,500, brings the joys of RADIUS to Windows NT environments. Unix RADIUS databases can be imported to EasyRADIUS' ODBC-compliant database. Easy-RADIUS verifies the remote user's identity with a variety of security options including random password tokens and challenge/response algorithms. Users can be assigned attributes and rights individually or in groups. The system warns of hacking attempts and features immediate IP blocking. The accounting module records user sessions. CRYPTO-Card, Inc.: <http://www.cryptocard.com>, (800)307-7042 or (847)459-6500 voice.

ZYXEL OMNI TA128: TWO USERS, ONE ISDN LINE

For \$399, two people can simultaneously access one ISDN line using the **Omni TA128** terminal adapter from Zyxel. Or an ISP can economize by using one ISDN line to service two PPP dial-up accounts - perhaps equipped with the 56 Kbps modems described above. The unit operates in one of two modes. In the default mode, the primary DTE port and two analog ports are active, allowing one user to surf the Web at up to 128 Kbps while keeping a phone, fax and/or answering machine active on the same line. In the alternate mode, one analog port remains active while the other becomes a DTE port, allowing two people to share an ISDN line. A Multi-Auto answer feature automatically detects and routes incoming calls for PPP, v.120, X.75 and v.110, as well as analog calls. Either U or S/T interfaces are available; the U interface has a builtin NT-1 device. ZyXEL Communications, Inc.: <http://www.zyxel.com>, (714)693-0808 voice.

TWO NEW PRODUCTS FROM US ROBOTICS

Priced at \$279, the DataBurst ISDN terminal adapter features Turbo-PPP, a USB proprietary technique that enables Windows 95 applications to enjoy the benefits of Multilink PPP (up to 512 Kbps throughput) even if they only support single link PPP (64 Kbps). The DataBurst plugs into the parallel port, includes an integrated NT-1 device and self-diagnostics.

It's easy to support any mixture of ISDN and dial-up callers with the NETserver I-modem remote access server from US Robotics. Where other servers support one fixed mixture of ISDN and analog ports, all of the NETserver's ports can connect either type of caller as needed. Available in an \$8,995 8-port or \$13,995 16-port version, the NETserver features integrated NT-1 for plug-and-play installation. US Robotics Corp.: <http://www.usr.com>, (800)877-2677 voice.

INTERNET PROFESSIONALS' JOB SERVICE

The Internet Developers Association, with 1,000 members, offers a help-wanted and available service at <http://www.association.org/jobs>. Members of IDA pay \$63.50 to list a job for 30 days; non-members pay \$127. Anyone may search the database for jobs for free, though non-members are restricted to an unspecified "subset" of the listings.

FANTASY MUTUAL FUND \$1,000,000 GIVEAWAY

Start with \$100,000 in fantasy dollars and parlay it into a million real bucks at <http://www.1800mutuals.com>. Contestants will build their own fantasy mutual fund portfolio, and can view their standings at any time on their personalized Web pages. Each month, a \$5,000 prize will go to the contestant with the best cumulative performance. When the contest ends in December, 1997, the overall best performer will receive the grand prize of \$1,000,000. The contest is sponsored by 1-800-MUTUALS, Inc., a Dallas-based mutual fund investment firm. (800)688-8257 or (214)953-0066 voice.

AD JUGGLER ROTATES, TRACKS WEB ADS

Ad Juggler 2.0 displays rotating banner ads linked to advertisers' Web

sites. Each time a page is loaded, a new banner ad is displayed. The utility tracks impressions (how often the ad is delivered), click-throughs (how often the user goes to the advertiser's site), the domain name from which the user arrives, date and time. Advertisers' account data such as click-throughs, credits remaining (for pay-per-click accounts) and other client data can be stored in separate log files. Status reports can be automatically generated and e-mailed to specified addresses. Image files, <alt> tags and other advertisement attributes can be changed via a Web browser without taking down the server. Ad Juggler 2.0 is priced at \$149 per server; site licenses are available for quantities of 10 or more. Digital-NATION: <http://www.adjuggler.com> or (703)642-2800 voice.

SYN-FLOODING COUNTER- MEASURES RELEASED BY BSDI

Hackers savaged The Public Access Networks Corp. (<http://www.panix.com>) in September, using a technique called "SYN-flooding" against which virtually all ISPs are defenseless. A SYN attack sends a stream of forged TCP connection requests to an ISP's listening port, such as a mail, name or web server. Because the source address is forged, the connection will never complete. But the ISP's server keeps trying for 75 seconds, while more bogus requests flood the pending request queue. Bona fide connections are dropped from the full queue. Source code for mounting SYN attacks was published in at least two hacker magazines, and SYN attacks have risen sharply ever since.

Berkeley Software Design, Inc., has released the source code of enhancements to its BSD/OS operating system which help defeat hack attacks that rely on forged IP addresses. One enhancement allows a BSDI terminal server or router to filter out requests containing forged IP addresses, effectively preventing the attack from ever getting on the Internet to reach its target. The other enhancement works at the defender's end, by severely limiting the amount of resources that the attacking packets can consume - thereby increasing the number of bona fide requests that get through. While the enhancements are designed for BSD/OS systems, the company has released the source code to encourage similar efforts by other operating system developers. The source code is available at <http://www.bsdi.com> or <ftp://bsdi.com> ♦



BABB'S BOOKMARKS by Chris Babb

Money-Making Tools

Chris Babb is a Senior Systems Engineer for Control Masters, Inc., a Systems Integrator located in Downers Grove, IL, where he designs industrial automation software by day. He's a member of the Aquila BBS/Internet Team by night. Chris has worked with Aquila since 1990 and currently handles technical support, Web design and construction, Internet training and various other online and offline duties. In his meager spare time, Chris enjoys music, playing bass guitar, the outdoors and his kitties. You can reach Chris via <mailto:chris.babb@aquila.com>

Putting up a Web site is a big milestone for many people. Businesses hope that their initial investment will reap rewards, and open new markets and attract the attention of clients otherwise unattainable. Many individuals hope that their pages will become popular enough to be listed on all the cool and hot Web site lists that seem to have become as commonplace as McDonald's and Burger King. Others just want to be able to say "Hey!, I have a page on the Web too!"

Regardless of which category you fit into, there are several things that are basic to all of them. First and foremost is content. Without interesting and informative content, your page will just be another lifeless, dull page among the millions that are accessible to the millions.

Second is the creativity you invest in developing your pages. Flair and creativity in how you display your content can make or break a site. Graphics, fonts, page layout and navigational ease all combine to help convey your message or product in a pleasing format that makes people want to know more, come back often or buy what you are trying to sell.

Third, is the ability to instantly provide what you are offering (if you're selling a product or online service) to those who were bright enough to find your page. This includes the ability to take credit card information or other forms of payment to allow instant ordering or access to what you're selling.

Oh yeah, there is a fourth thing that can help anyone with a business or personal Web page get a little more notoriety and hits on their site. Getting listed in a search engine is probably the first step. It's also about the easiest. Other forms of Web Site advertisement include press releases, books, newsgroups, newspapers, magazines, TV and radio. Unfortunately, not everyone has the money for the last few but there is a surprising number of resources available to help you with the rest.

As much as I'd like to, I can't be much help in the content department but, I think I can start helping you out with some of the others. I'll be featuring more of these types of sites in the near future as I think they can really help you out. Let's go to it.

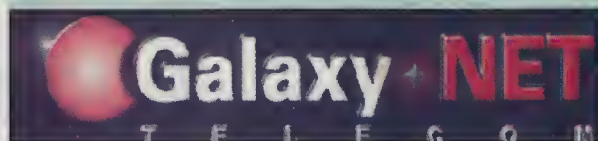
CASH COWS

Many people think it's "not safe" to pay for something over the Internet. Oddly, they are the same people who don't have a problem blurring their card number out over the phone, where it is as much at risk as any-

where. To appease these personality types, several companies have come up with an interesting way to charge for services, not by credit card, but through your phone bill in the way of a 1-900 number (everyone has to pay the phone bill, right?) If you want to do some selling over the Internet without the hassle of getting signed up with a bank to process credit card purchases, this may just fit the bill.

GALAXY-NET - THE WEB CASH SYSTEM

<http://www.galaxy-net.com>



Galaxy-Net is not only an Internet Service Provider but also provides products and services developed for electronic commerce and online product sales. Their WebCash Payment System is a proprietary system developed to accept VISA, Master Card or American Express for payment of products and services without transmitting this information online. Instead, this service will allow your customers to call either a 1-800 number to charge their purchases with the above listed credit cards or they can call a 1-900 number to have their purchase charged directly to their phone bill. This service is available 24-hours a day and is completely automated.

Now, you may be wondering just how much this will cost. There is no setup fee, but the transaction fees seem a little steep to me. Galaxy-Net charges 20% of each transaction, which covers the cost of billing and collecting, phone line charges and other associated costs. There is also a \$15 monthly fee, on top of the transaction fees, that will provide you with a monthly report of all your transactions. If your orders climb above \$1000 per month, this fee is waived. Fortunately, even though this may seem a little much, you can expect a 100% - 300% increase in your sales above credit card only payment options according to the information presented at this site.

Setup of your account is easy with only a form to fill out and fax to Galaxy-Net. Your account will be ready to go within 48 hours. For access to online products, Galaxy-Net provides a CGI program that handles customer authorization for access to programs or files. This is easily installed or can also be installed by Galaxy-Net for \$100.

LOGICOM - WEB900
<http://www.logicom.com/900.htm>



This was one of the first 1-900 schemes that I ran across several months ago. If your customers don't trust the Internet with their credit card numbers or if you want to grab the customer base that does not have a credit card, this is an excellent service, guaranteed to generate more cash flow for you.

This service allows customers to buy a product or service by simply calling a 1-900 number and having the product or service billed to their phone bill. At that time, they are given an access code that is to be entered in a form at your site. Once the code is entered, you can allow them into your site and/or have access to programs or files available on your site.

Setup for Web900 is completely free and again, the split is going to be 80% - 20% for the services I described above with Galaxy-Net. Not exactly cheap but it will certainly generate some otherwise unattainable business. All of the information you need is available to get you setup and running with Web900 right from this page. Be sure to make a visit.

NETCREATIONS
<http://www.netcreations.com>



This site has so much to offer that it's going to take the rest of this column to describe. I'll cover more of these sites in an upcoming column.

One of the things I like about NetCreations is that there is something for everyone here. NetCreations provides consultation, programming and software development for the Web and does an excellent job of it. This site contains all of the information that you need to make your site more popular, generate more cash and have a little fun along the way.

These pages provide links to a host of programs and promotional services designed to help you with everything I just mentioned. There are two areas I want to take a look at, software and promotional services. The rest you'll just have to discover on your own. Let's start with the software.

PINPOINT



There is nothing worse than going to a Web site and not being able to easily find what you want. That's where PinPoint comes in. PinPoint is a simple and easy to use search engine

that can be added to your pages with only a bit of HTML code. Simple, easy, effective and sure to be a welcome addition at your site. The cost is \$99 per year. A free trial is also available.

ADMAGIC



AdMagic allows you to display rotating sponsorship ads on your site. It is fully configurable in terms of number of ads, time an ad is displayed, background color and texture and more. You can also really irritate people by allowing the ads to remain in a frame even after they leave your site. Other excellent features are daily and monthly reports by advertiser and the ability to assign a specific number of ad showings. When the assigned number is running low, e-mail is automatically sent to that advertiser asking if they would like to purchase more. This is also done automatically and without service interruption. The cost for this little gem is \$2500 for a full domain license.

WEBLIST

One way to keep people coming back to your site is to provide them with timely information on what's happening with your site. WebList is designed to do just that without the hassle and bother of the list servers we are currently used to. Your mailing lists are managed through a simple, easy to understand interface and can contain up to 10,000 names. The only requirements are that you have CGI-BIN access and PERL available through your Web server. For \$500 you get the program with the ability to set up one list. For \$1500, you can receive an unlimited domain package that allows as many mailing lists as you can think up.

CATALOGMART CONNECTIONS



CatalogMart is one of the Internet's most popular sites for requesting mail order catalogs. This "connections" service gives you the ability to place a link on CatalogMart under your specific topic. Most users of CatalogMart are on the major online services and must pay for their access which means that you are getting buyers, not just browsers to visit your site. An example of this is described on these pages in terms of click rate. Search engine click rates are on the order of 1% whereas 75% of CatalogMart users follow the links presented. You want buyers? You want CatalogMart Connections. The price? Just \$50 per month. A great bargain.



PostMaster was featured in my column last year. Since then, it has been upgraded and enhanced to become what I feel is the most productive way to get on virtually every search engine on the Internet. The premise behind this service is simple. Just fill out a single form with all the information that search engines need to know about your site and it will be submitted to over 420 search engines and 1196 individuals (as of today). Much simpler than visiting 420 sites and filling out your infor-

mation each and every time. The cost of all this can be rather steep depending on your current situation but if you want to do business on the Web and want everyone to be able to find you, this service is indispensable. For a single ID, the cost is \$500. You are also able to purchase in quantities (for those who are administering several sites) of up to 40 ID's for \$4000. If you don't want to spend an hour filling out all of the information required, NetCreations can do it for you for an additional \$250 per ID. If you want to avoid the associated costs or just want to see how this can work for you, there is a free demo service that will post your site to 24 popular sites for free. This is well worth the investment of time and energy if you want to generate hits to your site.

Other programs and promotional services abound at NetCreations and new ones are always being added. Be sure to visit this site and look a little deeper as there is a ton of interesting and useful information strewn through. Also be sure to join their mailing list to keep abreast of the latest happenings at NetCreations. For people and business who want the Web to work for them, be sure to work with the NetCreations Web site.

NutSite© Of The Month GIRLS WHO EAT RIBS



<http://www.gwer.com>

Submitted by: Pat Perez

I think the byline in the message I received about this site says it all. "This page is best experienced blind." I would tend to agree. Garish, gaudy and possibly erotic (rib fetish freaks will love it), this site tends to glorify the rib, the recipes for cooking them, and generally has fun with the concept of loving and living with ribs. See if you can find the 12" rib!

There is a pile of uh... interesting information on ribs including a huge collection of pictures of uh... interesting looking women who seem to be taking ribs beyond what you'll find at the local BBQ. I think this note from the editorial section of the site says it all in a... rib. "Boy am I glad to see your magazine! I have been a longtime fan of girls, especially the ones that eat ribs. Even though nothing gets me going more than the sight of a pretty young nubile horkin' down a full rack of southern- style ribs, I have never been able to discuss this with my buddies." Is Ribs Anonymous next? A finger licking good site to behold.

I have these as well as all of my past articles available for browsing at:
<http://www.aquila.com/babbs.bookmarks>

Talk to me. Tell me what you like, what you don't like and what you want to see in the future. I want to hear it! [Mailto:cbabb@aquila.com](mailto:cbabb@aquila.com) ♦

Genesys for Worldgroup



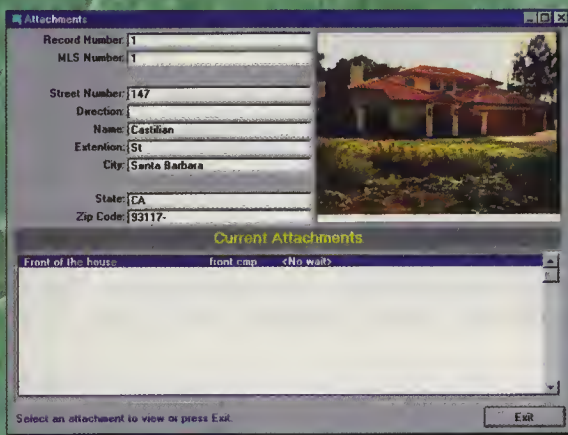
Imagine creating a beautiful, 24-bit color multimedia database that will run on your Worldgroup system! Genesys™ for Worldgroup allows you to easily develop robust graphical on-line informational applications and services. With simple GenScript configuration files, you can custom design your own application with embedded

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FTP: <ftp.hvs.com>

Online Multimedia Database



PUBLISHING ON THE WEB by Michael Erwin

Part 23 - New HTML 3.2 Tags

Michael lives in Huntington, West Virginia, with his wife Jacqueline and Paxi Baby. (Jackie's Shar-Pei dog.) He has designed, built and administered network systems for over 16 years. Mike has organized and documented his 600-megabyte bag of tricks, tools and voodoo on a CD-ROM entitled, "The WebMaster's Resource." It is available for US\$24.95, plus US\$2.00 shipping in the United States or US\$5.00 elsewhere; send check or money order to 320 36th Street, Huntington WV 25702-1632. Please allow 4-6 weeks for delivery. For more information [mailto: mikee@eve.net](mailto:mikee@eve.net)

Well it seems as though the people who brought us the HTML standards have been busy, again. Enter stage left, HTML standard 3.2, which was code named "Wilbur," apparently after the character in Charlotte's Web. No, you didn't miss version 3.0; we went from HTML standard 2.0, which is defined in RFC1866, to HTML standard 3.2, skipping the proposed 3.0 standard altogether. Which sounds a lot like Microsoft's way of handling versions; did you ever see Windows NT 1.x or 2.x?

So this month, let's take a tour of what's in HTML standard 3.2 and what's not.

To start at the very beginning, we should now use a new tag at the beginning of each HTML document. This new tag is called a DOCTYPE declaration tag. This comes from the SGML side of the HTML aisle. Take a look at the following line:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN">
```

This line tells SGML editors and tools what type of a document is being loaded or viewed. The opening of this tag — `<! —` works just like a remark statement to most browsers. So many browsers ignore this line altogether.

The **DOCTYPE** element is the beginning of the document declaration, or the **DOCUMENT TYPE**. In this case, the SGML editor would know this document is an HTML instead of SGML document and would be **PUBLIC**.

The elements inside of the quote marks are additional declarations. In this case, they tell the SGML editor or browser that this document follows the World Wide Web Consortium, a.k.a. W3C, standards. It also tells the SGML utility that this document conforms to the Document Type Definition of HTML standard 3.2, and is in English.

Now, according to the HTML 3.2 standard, a line like the one above is to be used in each and every HTML page we compose. Yeah, right. Using this tag does not hurt anything either. Not to mention that many of the newer HTML editors automatically put a line something like the above DOCTYPE tag at the beginning of each HTML file.

The document declaration tag is followed by `<HTML>`, `<HEAD>` and `<TITLE>`, as shown below:

```
<HTML>
<HEAD>
<TITLE>November's Publishing on the Web</TITLE>
```

The `<HTML>` and `<HEAD>` we should already know. We should also know that most HTML browsers will read this `TITLE` tag, and display the contents of `TITLE` at the top of the window. Pretty straight forward, right?

Now, here is where we normally put a `</HEAD>` closing tag, to tell the browser that the HTML documents head is finished. Well, we now have several options before we are finished with the document head.

The first option is the use of a **META** data tag. This tag tells the utility reading or parsing the HTML document, some additional information about the document. For example, look at this **META** tag:

```
<META NAME="keywords" CONTENT="magazine
html isp publishing">
```

In this **META** tag, I am telling the web browsing client that I have information in a **META** field **NAMED** "keywords" and the **CONTENT**s of that field is "magazine html isp publishing." Why would you want to do this? Well, many of you have written to me and asked how could you get your site to be higher in the search engine results. Well this is a great way. For example, when AltaVista actually parses your HTML documents, it also looks for this **META** information named "keywords." It then adds these keywords to the words it parses from your HTML documents. This should help give you a higher hit count when someone searches the database.

As a side note, I found several comments that give me the impression that AltaVista and other utilities will ignore the "keywords" **META** tag, if you use more than seven keywords. So don't get too carried away.

Another popular use of **META** tags is to give AltaVista or Infoseek a narrative description of the HTML document. For example if you would write a **META** tag like this:

```
<META NAME="description" CONTENT="In this
exciting site, you will find out how to use the new
features of HTML standard 3.2">
```

When AltaVista and Infoseek parse this HTML document, they will actually store the description stored in the **CONTENT**s attribute instead of the first couple of lines of the actual document. Many surfers will look at the descriptions of their search hits results to see if they want to investigate a site further.

If you don't use any of the other tags in this month's column, start using the **META** tag as shown here. You

will get more bang for your buck when others are searching for information online. After all, don't you want more hits?

Another new tag that you can use in the HEAD section of your HTML document is the LINK tag. Look at the following examples:

```
<LINK REL="home" HREF="http://www.boardwatch.com/">
<LINK REL="toc" HREF="fable.html" TITLE="Fable of Contents">
<LINK REV="back" HREF="/previous.html">
```

As you can see, <LINK is the opening of the link tag. The next attribute of the tag will be either REL or REV. These are the *relationship attributes*. REL tells the browser that this link is a normal RELationship. The REV attribute indicates that this is a REVerse relationship to a previous URL.

The 3.2 standard also states that you can place a TITLE in a LINK tag. This TITLE is an additional TITLE to the URL used in the HREF attribute.

This tag seems to have some great possibilities. What you ask? How about site management. Think of it this way, you have hyper LINKs to the various documents that refer to the table of contents, home, next, previous, glossary, index and other documents in your site navigation. The browser could build a navigation button bar for your site, without your server sending or handling either image map menus, HTML document trees or the like.

However, most browsers currently do not do anything with the LINK tag information. This may change in time as HTML 3.2 is more widely adopted.

The next tag that can be placed inside of the HEAD of an HTML document is the BASE tag. This is a simple little tag that solves a couple of problems when creating mirror web sites. For example, look at the following BASE tag:

```
<BASE HREF="http://www.boardwatch2.com/mirror/">
```

In this case, the BASE tag tells the location of documents. Yes, the browser does normally keep track of that. But many times when you are setting up a mirror site, the HREF of the HTML document isn't correct when using relative URL paths.

At this point you can close the HEAD of the HTML document with a </HEAD> tag. Not much to the HEAD part. It's relatively simple. However, within the BODY of an HTML document, it is a different story.

One of the first things I noticed about HTML standard 3.2, is how many of W3C's examples do not use the <CENTER> and </CENTER> tags. For example, I have used the following line of HTML code for quite some time to center text on a page:

```
<H1><CENTER>This should be centered</CENTER></H1>
```

Well, it seems that the W3C has added an attribute to many other HTML tags to handle this better. Take a look at the next example:

ISPs: LOOKING FOR A REMOTE ACCESS SERVER THAT IS FASTER, MORE RELIABLE, & LESS EXPENSIVE?

Look no further! Computone's IntelliServer **PowerRack** is exactly that! In comparison to Livingston's Portmaster, the PowerRack has a per port capacity of **921.6Kbps** (Portmaster -- 115.2Kbps), the PowerRack can support **16-64 PPP lines** (Portmaster -- 10-30), the PowerRack's average price per port is \$58 for 64 ports (Portmaster -- \$97 for 30 ports), and the PowerRack has a **5-year warranty** (Portmaster -- 1 year).

The PowerRack also has the standard feature list: TCP/IP, dial-in/dial-out access, a powerful RISC CPU, BNC/AUI ethernet connectors, ISDN capability, PPP, SLIP, CSLIP, SNMP, *bootp*, *rlogin*, *telnet*, reverse *telnet*, PAP/CHAP authentication, RADIUS, RIP and subnet routing.

PowerRack user and Internet Service Provider Rick Smith, of Town Square Access (rick@tsa.net), commented, "I love my PowerRack. It costs about \$2,000 for 16 ports. Ethernet connected, RADIUS supporting, full PPP, etc.etc.etc. And yes each port handles over 900K per port! It's only \$500 for each 16-port card to add to the first 16. The box can support 64 (4 cards) ports. By the time all is said and done, the final price is **\$3,500 for 64 ports**. Comparable Livingston Portmaster will cost you approximately \$6,000 for only 60 ports."



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<H1 ALIGN=CENTER>This should be centered with
Heading 1 attributes**</H1>**

This works with all of heading levels and also with Paragraph tags. For example:

<P ALIGN=CENTER>This is a really short and centered
paragraph.**</P>**

OK, I can hear the gears turning. If you can ALIGN a Paragraph on CENTER, you can also do the following:

<P ALIGN=RIGHT>This is a really short and right
aligned paragraph.**</P>**

<P ALIGN=LEFT>This is another really short paragraph
that is left aligned.**</P>**

This last example of the Paragraph tag is also the default. Also, browser support for **<P ALIGN=RIGHT>** is growing but is not always there.

By the way, did you notice that I had an opening Paragraph tag, **<P>**, and a closing Paragraph tag, **</P>**. Get used to this new Paragraph structure. If you are going to be developing HTML documents for a living, use the opening and closing Paragraph tags.

Another one of the widely used tags here at Boardwatch is the PREformatted text tag. Many use this tag to display text exactly as it is entered into the HTML document, especially when displaying lines of programming or HTML code. This tag has also undergone a simple but much needed addition. Take a look the following example:

<PRE>
This text will appear just
as you see it.
</PRE>

However, you can also do the following:

<PRE WIDTH=10>
This text will appear nothing
like the way you see it.
</PRE>

In this example, by using the WIDTH=10 attribute in the PREformatted tag, you can set a maximum width of the text. This will help in keeping the contents of documents readable, especially when it is lines of programming code.

I know there is nothing really cool in this month's HTML examples, so I am going to leave you with this line which will be discussed in the continuation of HTML 3.2 standards and the new browser specific HTML extensions:

Now after giving you this teaser, I want you to go experiment with these new tags. Till next month.....♦

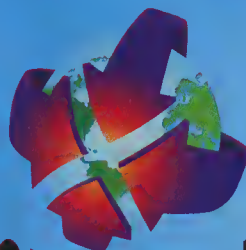
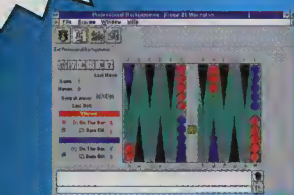
mikee@eve.net

1-800-473-3177

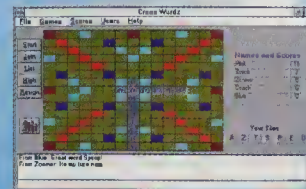
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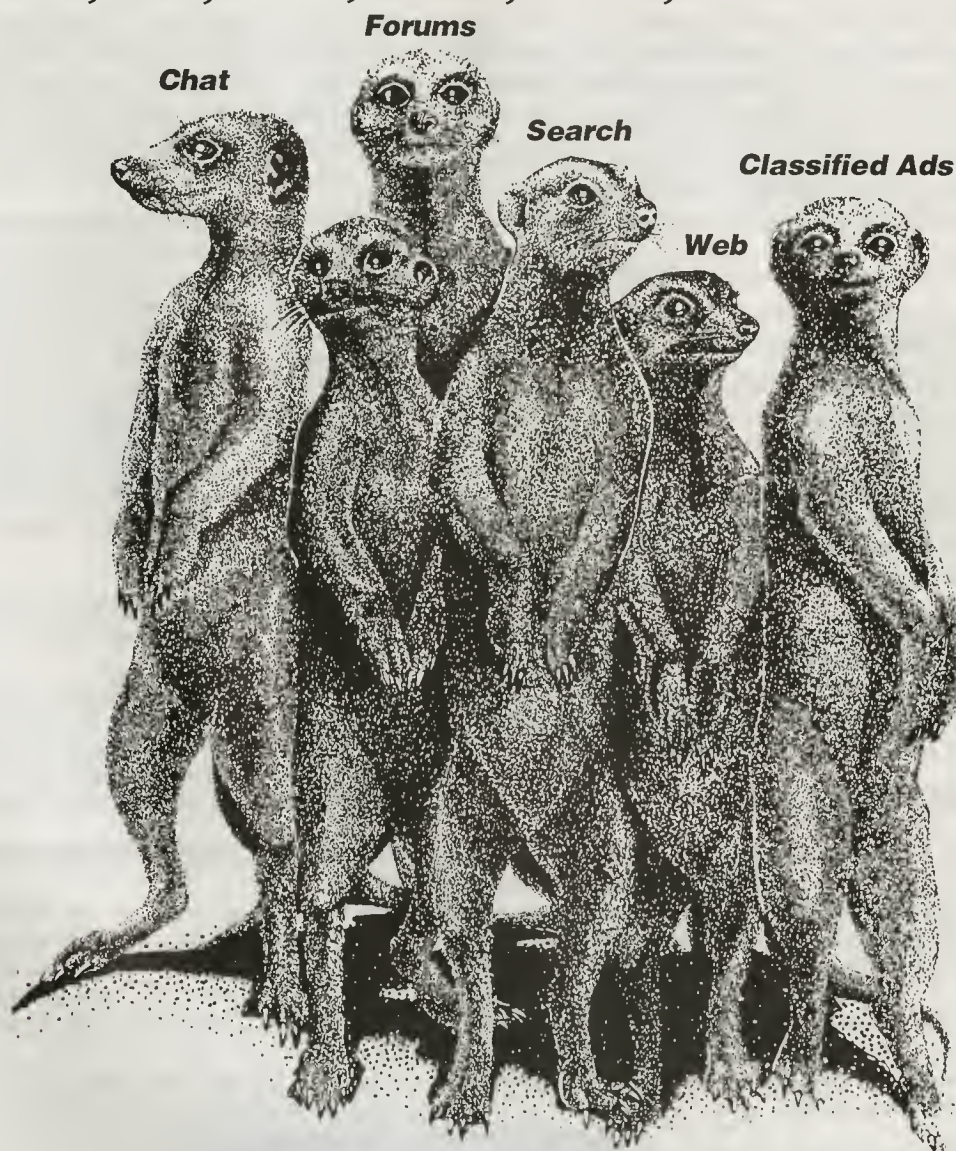
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WEB SERVERS DISSECTED by Michael Erwin

NETSCAPE ENTERPRISE SERVER V2.0

This month I am going to dissect a new version of an old favorite in the web server market from Netscape. We will take a look at Netscape's Enterprise Server.

The first thing you need to know is that Netscape makes several levels of web servers. The first level is what they call their **Communication Server** or **FastTrack** server. It's a full featured web server, except that it will not process secure transactions. They also make a product suite known as Netscape **SuiteSpot** v2.0. SuiteSpot includes the Enterprise Server v2.0 that we will be dissecting this month.

I installed the product suite on the following system.

WEB SERVER TEST BED

Intel Pentium 166mhz CPU
64mb of EDO RAM
2gb SCSI HD
S3 PCI Video Controller
3Com 3C509c ISA Combo Ethernet Card
Toshiba 3401b External CD-ROM drive

This is a slightly more powerful system than I have used in the past. We now have a 166mhz Pentium instead of 133mhz. I also doubled the RAM to 64 Mb. If I concede that Windows NT is not going away, I may as well run it correctly – with as much RAM as I can afford.

NETSCAPE SUITESPOT

Netscape SuiteSpot comes in a much larger box than it did in the first version that we dissected back in April. Opening the box I was pleasantly surprised to see a lot more documentation than what came with the version 1. The previously reviewed system came with two manuals, the "Installation And Reference Guide" and "Programmer's Guide." The Programmer's Guide was 70 pages and the installation guide was only 104 pages, with a skimpy 4 page Windows NT Supplement pamphlet.

Well the "Programmer's Guide" is now 263 pages, and the "Administration Guide" is now 216 pages. It also contains a manual on their LiveWire application development system, "LiveWire Developer's Guide" which is 316 pages, "Navigator Gold Authoring Guide" which has 62 pages, a 330 page "JavaScript Guide," and a 182 page "Netscape Navigator" manual.

INSTALLATION

The software comes on two CD-ROMs that contain versions of the software for Intel and Alpha systems.

The setup utility also installs Netscape Navigator Gold v2.02. At the time of this writing, Netscape Gold v3.0 was not released and was not included with SuiteSpot. You will need a browser that can support frames and JavaScript to administer Netscape Server v2.0, which is handled nicely in Navigator Gold v2.02.

The LiveWire development system has to be installed separately. LiveWire is bundled with SuiteSpot but can also be purchased separately for **\$295**. LiveWire lets you create client-server applications that actually run on the web server instead of the browser. It uses JavaScript to create these applications, which are similar to CGI programs. But since the applications are written in JavaScript, the applications are tightly integrated into the HTML pages that interface them. There is also another Netscape product called LiveWire Pro that adds SQL database support and a report generator to the base product, which can be purchased for **\$695.00**.

I will be working with LiveWire in detail in an upcoming issue. It does offer some exciting possibilities.

Now back to the ranch. During the installation, you will be prompted for an administrative TCP/IP services port number and a corresponding password. After the base software installation is done, the software will build the basic Windows group.

CONFIGURATION & ADMINISTRATION

Netscape actually installs an additional web server that listens on a separate TCP/IP services port. This additional web server is accessed through a browser through a special URL. In my case the URL was, <http://milo.boardwatch.com:5567/>

This URL includes the administration server's fully qualified domain name and the TCP/IP services port that the admin server listens to. The system then prompts you for that User ID and password, I supplied during installation. Once the admin server accepts the UID and password, you will receive an HTML document like the one shown in Figure 1.



Figure 1: Administration is handled via a "private" web server

Michael lives in Huntington, West Virginia, with his wife Jacqueline and Paxi Baby. (Jackie's Shar-Pei dog.) He has designed, built and administered network systems for over 16 years. Mike has organized and documented his 600-megabyte bag of tricks, tools and voodoo on a CD-ROM entitled, "The WebMaster's Resource." It is available for **US\$24.95**, plus **US\$2.00** shipping in the United States or **US\$5.00** elsewhere; send check or money order to 320 36th Street, Huntington WV 25702-1632. Please allow 4-6 weeks for delivery. For more information <mailto:mikee@eve.net>

Notice in this case I have two servers already configured on the system. One called "milo" and the other called "tristate." Look closely and you will notice that the red power switches are in different locations. Milo is turned "off" and the server known as tristate is turned "on." If you are wondering how the switch to milo can be off, when I am accessing it through port 5567, remember the admin server is actually another instance of the web server running on the system. Matter of fact if you are running low on resources, you can also turn off the administration server. I wouldn't, but you can do it.

If you click on the button labeled "Install a new Netscape Enterprise Server" you will be presented with a screen similar to that of the one shown in Figure 2. From this screen, you can set up additional web servers to handle requests on different IP addresses and even a different TCP/IP services port. This gives you some flexibility in configuring multi-homed servers.

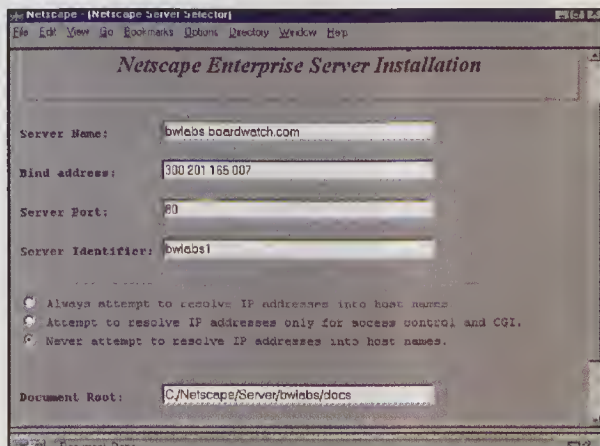


Figure 2: Installing Multi-homed Servers is Easy

Notice that you can also specify each server's identity and document root directory. The server identifier is the name that will be displayed on the admin server's home page shown in Figures 1. You might notice that I did not click on the options to resolve the IP addresses into the host names. If I really needed to keep track of the host names, then I would. Otherwise just the IP address is put into the log files. When you click on the "OK" button to create a new server, the system also places a few simple base document files in the new server's root document directory.

To be able to use these additional multi-homed web servers, you also need to configure NT to handle the other IP addresses, and also add these IP addresses to the the DNS. You might want to bind several addresses to the LAN adapter before you need it. Otherwise you will need to reboot the system each time you bind an IP address to the LAN adapter.

You can configure how the administration functions operate from this page. They can also be configured remotely through a web browser. If you click on the "Configure Administration" button at the bottom of the admin server's main page, you can change just about everything: how the web server daemon runs, SSL ports, how the logs files work, even the log file locations. Also, on this page you can further restrict access to the administrative web server.

ISSUES

If you buy the entire NetScape SuiteSpot product line, you will be spending close to **\$3995**. Now Netscape states this gives you the capabilities of Lotus Notes. I use Lotus Notes all the

time, and currently there is no web server for the enterprise or the internet that gives you all of the features of Lotus Notes. However Lotus Notes does not make a great web server at the time of this writing.

If you purchase SuiteSpot, you not only receive Web Server 2.0 software, but you also get a mail, news and proxy server. When you look at their intended corporate audience, it is a pretty good deal. But for most us, all we will need is just the Web Server and LiveWire. Which will set you back **\$995**.

The only thing I would really like to see improved is the individual user management. O'Reilly's WebSite, Purveyor and Frontier Technologies' SuperWeb server do a better job much easier. Netscape does not use the tree type methods of the other commercial servers.

PERFORMANCE

Netscape Enterprise Server 2.0 performance is excellent, even if I did use Windows NT as the OS. It handled the CGI and SSI with no glitches. Netscape also makes a version of the server and the other SuiteSpot components for various UN*X platforms when NT just doesn't have the power.

I will have to recommend this server to several clients. Matter of fact, starting this month, I am going to start doing long term testing of web server software I dissect here. Netscape's Server 2.0 is going to be the first. As we develop the site, I will make you aware of my findings. You will also notice that I have added some new items to the following table. ♦

DISSECTION SUMMARY

NETSCAPE SUITESPOT

AREA	RATING
PRICE	👍
INSTALLATION	👍👍
ADMINISTRATION	👍👍👍
USER AUTHENTICATION	👍👍👍👍
USER MANAGEMENT	👍👍👍👍👍
DOCUMENTATION	👍👍👍👍👍👍
SECURITY	👍👍👍👍👍👍👍
CGI HANDLING	👍👍👍👍👍👍👍👍
PERFORMANCE	👍👍👍👍👍👍👍👍👍
AUDIENCE	Anyone running a commercial web site, that needs multi-homing capabilities and remote administration. It is a wonderful solution for Intranets and Corporate Sites

Contact Information

Netscape Communication Corporation
501 East Middlefield Road
Mountain View, CA 94043
<mailto:info@netscape.com>
<http://www.netscape.com>



CONSUMMATE WINSOCK APPS by Forrest Stroud

As the holiday season once again draws near, it's time to start thinking about the spirit of giving. What better way to buy presents for all your loved ones than the Internet? Beat the mall crowds, the sold-out gift racks, and the gridlock traffic by loading up Netscape and checking out these sites:

The applications reviewed here and many more are available on Stroud's Consummate Winsock Apps List, <http://www.stroud.com> and <http://www.cwsapps.com>.

Forrest H. Stroud is a recent graduate of The University of Texas at Austin. The Information Systems and Data Communications Management major is currently working as a full-time internet consultant in College Station, Texas. Stroud can be reached at <mailto:neuroses@stroud.net>.

Amazon.com — <http://www.amazon.com>

Earth's biggest bookstore, Amazon.com offers more than 1,000,000 titles — more than enough to find that perfect gift for the avid book reader in your life.

The Sharper Image Catalog — <http://cyber.mart.com/tsi>

A great site for finding the perfect gift for your loved one — there's even a "Great Gifts" section of items to help you get started.

Eddie Bauer — <http://pathfinder.com/DreamShop/live/Shops/Eddie.index.html>

Cool clothing wear makes for a great gift — check out the online Eddie Bauer catalog for the coolest wares.

DealerNet — <http://www.dealernet.com>

Looking to buy a brand new 1997 sports utility vehicle, sedan, or sports car? Then look no further — DealerNet is the perfect place to begin your search for the car of your dreams.

Dream Shop — <http://www.dreamshop.com>

Online mall utopia — Dream Shop is an online storefront for great shops like Eddie Bauer, Spiegel, The Bombay Company, Sports Illustrated Insider Authentics, and a whole lot more.

OIL CHANGE



Desc: A cool new agent that downloads product updates and bug fixes for you

Pros: Automatically downloads product updates and bug fixes for you, quick and easy to use

Cons: Vendor support needs to be improved, new products should be offered as well

Status: Free beta release

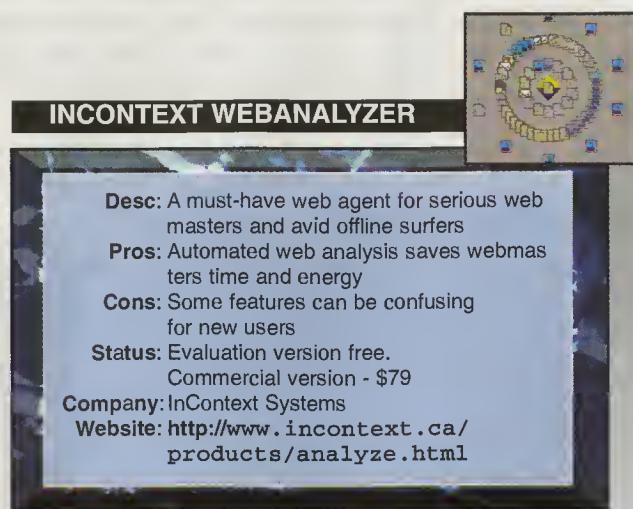
Company: CyberMedia Inc.

Website: <http://www.cybermedia.com/oil/ochome.htm>

Imagine a program that automatically updates your favorite programs with new features and bug fixes as soon as they are released. How about a program that will automatically inform you of obsolete software and then, upon your request, proceed to download the latest version currently available. CyberMedia's Oil Change makes all of this possible and more. Oil Change scans the applications on your hard drive and then checks its central software repository to determine if any newer versions have been released. Access to both 16-bit and 32-bit clients is provided and updates for products like Adobe Acrobat and Photoshop, Microsoft Word and Excel, Niko Mak's WinZip, Netscape Navigator and Netscape Plug-in Modules, Internet Explorer and ActiveX Controls, and more can all be automatically downloaded with Oil Change. You can even get updates for Windows 95 and NT as they become available. Oil Change allows you to try new updates out and then provides you with an option to uninstall them and leave the old versions on your computer if you so choose.

The potential for such a product is unlimited, but the current release exhibits only a small fraction of the possibilities. One limitation of Oil Change is that it only identifies new versions of applications already installed on your machine. For example, unless a previous release is already installed on your computer, you won't be able to download the latest version of Internet Explorer, Netscape Navigator, or similar program. Oil Change could also do a better job of letting you know exactly what improvements the new updates are making to your existing applications. Another limitation is that Oil Change only identifies a tiny percentage of the thousands of software applications available both on and off the Net. You won't find the latest updates to popular programs like Agent, Eudora, CuteFTP, mIRC, WordPerfect,

LapLink, and a multitude of other clients. However, Oil Change is still in beta release, and I wouldn't be surprised if the number of vendors to sign on with CyberMedia and Oil Change increases exponentially over the next few months. Oil Change may not render The CWSApps List obsolete, but it does provide an attractive alternative for keeping you up to date with the latest and greatest software applications.



INCONTEXT WEBANALYZER

Desc: A must-have web agent for serious web masters and avid offline surfers

Pros: Automated web analysis saves webmasters time and energy

Cons: Some features can be confusing for new users

Status: Evaluation version free.
Commercial version - \$79

Company: InContext Systems
Website: <http://www.incontext.ca/products/analyze.html>

WebAnalyzer isn't your normal web agent — that much is apparent from the minute you begin using the client. As with other automated agents, WebAnalyzer will download entire web sites onto your local machine. The similarities with other clients of its kind end there. Perhaps this is because WebAnalyzer is geared more towards the serious web site developer rather than the avid offline web surfer. The real power of WebAnalyzer begins and ends with the webmaster — entire sites can be analyzed, resulting in comprehensive reports that detail broken links, file types and sizes, site structure, web links into and out of various pages, and more. The ability to reveal broken links is perhaps the strongest feature and definitely the most useful for those in charge of maintaining large web sites. By automatically scanning your pages to find links that have changed or been removed, WebAnalyzer can save you considerable time and effort. Once you've discovered that your site has a few more holes than expected, WebAnalyzer allows you to quickly and easily patch them up. Launching your favorite HTML editor or web browser for correcting or reviewing broken-link pages is a simple right-mouse click away with WebAnalyzer.

While finding and fixing broken links may be WebAnalyzer's forté, its feature-set certainly doesn't end there. WebAnalyzer also presents you with three different views to guide you through the various aspects of your web site — wavefront, link, and file views. The wavefront view presents your web site as concentric circles that surround your top-level front page. These circles represent the lower-level pages, images, and files that make up the crux of a web site. With this view, you can easily identify the hierarchy of your web site as well as the relationships between various pages and levels. The link view presents you with an individual page and the links both to and from that page. Out-links and in-links can be anything from mail addresses to other web pages to multimedia files. This view helps you visualize the relationships between an individual page and its various links. Finally, the file view presents a complete listing of all the pages, graphics, and similar links in your web site. Comprehensive information including page

name, type, size, date last modified, out-links and in-links, and depth level is presented in an easily understandable report format. You can also sort your entire web site by any of the above topics. The file view presents your web site in its entirety, including broken links (in red) and all links into and outside of your web site.

WebAnalyzer has several tools that compensate for the fact that most web sites vary considerably in terms of size and structure. A depth level option allows you to choose how many levels of information an analysis will gather for your web site. You can also use this option to determine whether or not external links should be tested. Filters are another tool that can be applied to reduce or increase the amount of information presented for your site. You can create your own filters to show only files of a certain size or type. WebAnalyzer also has several default filters that you can use to show only pages with broken links, pages with multimedia content, or text-only pages. These useful tools can be applied before you begin your web analysis, thereby giving you the means to control the amount of information presented and the time it takes to gather that information. Overall, WebAnalyzer isn't the perfect web solution — after all, it won't create HTML pages for you. But for those conscientious and over-burdened webmasters out there who constantly strive to ensure that their sites are error-free, WebAnalyzer is the panacea you've been longing for.



KOAN PRO

Desc: The perfect tool for creating great sounding background music on web sites

Pros: Great sounding background sound clips for your web site, sound bytes average only 7 Kb

Cons: Koan Music clips lack real-time streaming and built-in web browser support


Status: Free demo release — commercial version also available

Company: SSEYO Ltd.
Website: <http://www.sseyo.com>

SSEYO's Koan Pro gives you the ability to create great-sounding background music for your web pages. Koan sound bytes can play for up to eight hours yet average only 7 Kb per piece, presenting webmasters with the perfect solution for giving users something cool to listen to while browsing or downloading files from your web site. Not only do Koan clips take up less space than comparable MIDI and WAV files, but they also sound much better. You can create everything from soothing and mystical ambient beats to thumping techno tunes with Koan Pro, and the sound mixer doesn't even require a musical keyboard. And as long as your audience has the Koan Pro plug-in for their Netscape or Internet Explorer web browsers, they too can easily listen to the relaxing and reflective or quick and provocative music that you create. The Koan Plug-in plays Koan clips that are generated locally in real-time and can even make use of SoundFonts. Check out SSEYO's LiveConnect site (<http://www.sseyo.com/lconnect.html>) for a multimedia showcase of the extensive capabilities found in both Koan Pro and the Koan Plug-in. While the plug-in gives users an efficient way to play Koan clips, the Pro sound mastering tool is what makes Koan really shine.

By utilizing sound templates in Koan Pro, you can take pre-existing pieces and customize them to your delight with more than 150 specially designed variable controls. Fifty separate voices, five different voicetypes (ambient, rhythmic, fixed, follow, and repeat), four music rule types (scale, harmony, next note, and rhythm), and specialized support for the most popular sound cards represent only the beginning of Koan Pro's extensive selection of on-screen custom controls. There are alternatives to Koan Pro that already exist on the web, including Microsoft Internet Explorer's built-in support for MIDI background sound clips. Additionally, apps like RealAudio and TrueSpeech can stream remote sound clips in real-time, giving your users the opportunity to listen to music while it's being downloaded, rather than having to wait until the entire piece has been downloaded before being played. Still, few apps can match the high-quality music and small files produced by Koan Pro, and fewer still offer powerful tools for both creating and playing music on the web. If you've been looking for a unique way to spice up your web site, CD ROM, or similar multimedia project, Koan Pro could well be the beat that you've been missing.

TRUSTEDLINK INP



Desc: Web Site development tool for small-medium businesses

Pros: Total web solutions package, makes setting up professional looking web sites easy

Cons: Best suited only for small and mid-sized business

Status: Free evaluation. Commercial version - \$195

Company: Harbinger Net Services


Website: <http://inp.harbinger.net>

TrustedLink INP is the perfect solution for small and intermediate sized businesses just starting out on the web. In addition to the software itself, Harbinger Net Services integrates web site hosting, Internet access, e-mail accounts, online support, and all the software necessary to get your business up and running on the Internet (and at the same time give you a head start against your competition). With a no-risk free trial offer available on the Net, your business has nothing to lose by trying out the complete web offering (a \$435 value). TrustedLink INP, the centerpiece of the total web solutions package, will take you step by step through the process of creating a professional-looking web site. Extensive templates customized according to industry type are available for professional, consulting, agricultural, construction, manufacturing, distribution, retail, and financial services. All you have to do is fill in information specific to your company. TrustedLink handles the rest and even offers a collection of attractive and helpful icons and background images in order to help improve the appearance and feel of your newly constructed web site.

When you've completed these steps, you can use your web browser to preview the pages and then return to TrustedLink to make any changes you find necessary. Finally, you are ready to put your web site on the Net. As long as you have an account with Harbinger, this normally time-consuming process is as simple as clicking a button. Even better, after each update that

you make to your web pages, just click on the same button and only the newly revised pages will be sent to your web site. If you have an account with another provider, uploading your pages will require a separate File Transfer Protocol (FTP) client. TrustedLink also offers Web Registration Services (WRS), which update the major Internet search engines and indexes with information about your web site. There are HTML editors better suited both for experienced individuals and for larger companies, but few editors exist that more effectively meet the needs of the majority of businesses that are just now getting on to the web. If your business fits this category, Harbinger and TrustedLink INP provide everything you need to get up and running on the Internet quickly and painlessly.

FTP EXPLORER



Desc: A solid FTP client with the same great features found in the Win95 Explorer

Pros: Solid and extensive set of features, Windows Explorer-like interface, easy to use

Cons: Could benefit from a side-by-side remote/local site display

Status: Freeware

Author: Alan Chavis

Website: <http://www.ftpx.com>

FTP Explorer is similar to FTP2000 in that it sports a Windows 95 Explorer-like interface. FTP Explorer offers more than just the interface, though; all the great features found in the Windows Explorer can also be found in FTP Explorer. Efficient drag and drop for file transfers, multiple file displays (icon, list, and details views), quick sorting on multiple keys (including name, description, date, size, type, owner, group, and permissions), right-mouse button functionality, transfer of entire directory structures, and property details for files are just a few of the Windows Explorer features found in the FTP client. In addition, FTP Explorer adds a ton of its own features. Multiple file transfers and simultaneous background downloading (you can even launch multiple ftp processes concurrently), configurable connection auto-resume, Quick Connect and automatic display of file descriptions (two features made popular by CuteFTP), site manager import capabilities (import site directories from either WS-FTP or CuteFTP), directory information caching, automatic logging, Quick View capabilities, and built-in support for fpArchie give FTP Explorer quite an impressive feature-set.

Still, several areas that need improvement keep FTP Explorer from taking the crown; most notably, FTP Explorer only displays the remote site's files as opposed to WS-FTP and CuteFTP's side-by-side display of both the local site and the remote site. FTP Explorer also lacks file mask filtering, firewall/proxy support, an online help system, an extensive list of default sites (although importing one from another FTP client is available), automatic renaming on transfer, quick searching, and a customizable toolbar — all of which are features currently offered by the competition. Despite its current limitations, this freeware client is quite impressive, especially considering its recent emergence onto the Net scene. If it beefs up its feature-set in the near future, FTP Explorer could give CuteFTP a serious run for its money. ♦



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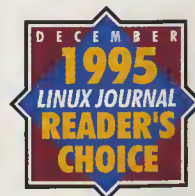
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DR. BOB

by Bob Rankin

DAN DERN - THE INTERNET CURMUDGEON

Bob Rankin, known as "Doctor Bob" in the online world, is a writer, computer programmer and consultant who enjoys exploring the Internet and sharing the fruit of his experience with others. Bob is co-driver of *The Internet TourBus* and author of "Accessing The Internet By E-Mail", which has circulated widely on the Internet, and is available in 15 languages. Send e-mail to <mailto:BobRankin@MHV.net> or visit him on the web at <http://csbh.mhv.net/~bobrankin>

Is Netscape a bad thing? Is PointCast simply a waste of bandwidth? Will widespread use of Real Audio bring the Net to its knees? Having assumed the mantle of "Internet Curmudgeon," Dan Dern considers it his duty to

cast a critical eye on the hype and hoopla surrounding the Net. He has advocated that we are often all too eager to grab hold of the latest technology—regardless of the human impact. Is he just grumpy, or is there merit to the idea of eschewing multimedia glitz in favor of plain old information?

With a sense of humor that cuts to the quick, Dan has often played the role of reality checker for the Internet community. His passion for making the Internet both understandable and accessible has helped many to find their way in the online world.

For a decade or so, Dern has been involved in what he terms "Internet show business"—writing and speaking on Internet topics for a host of publications and trade shows. In 1993, Dern penned one of the first books about the Internet (*The Internet Guide For New Users*, McGraw-Hill, ISBN 007-016-511-4) and was founding editor of *Internet World Magazine*.

Dern is also creator of the *Internet Paper Airplane*, a single sheet of paper with a ton of Internet information, and has gained recognition by writing songs about the Internet and Unix. "Batch Up Your Shellscripts" (to the tune of "Brush Up Your Shakespeare") and "We've Grepped A Little List" (based on a Gilbert & Sullivan number) are vintage Net humor and can be found at Dern's web site (<http://www.dern.com>).

I spoke with Dan Dern about how he got involved with the Internet community, pushed a few of his hot buttons, and found out some of his current projects. Here's a part of our conversation...

DOC: Tell me about the early days of your involvement with the Internet.

DERN: In the early 80s I was looking for a job, and was hired as a tech writer for Bolt, Beranek, & Newman to do user documentation for the Defense Data Network, which at the time was built on ARPANet technology. Eventually I became PR writer and PR manager. In the process of being there I wandered around and learned things. There was this VT100 on my desk that was not only connected to a big computer, but also to the ARPANet.

I discovered I was able to swap e-mail with people, get on mailing lists, and this thing called Usenet. The

ARPANet was still in full swing, running out of the Cambridge Network Operations Center, so I learned a lot about using the network, what it was good for, and I just kept taking notes.

So when I got out, in addition to writing about Internet technology for the trade press, I ended up writing a book — one of the first about the Internet. At the time, the Net didn't seem to have much relevance to the corporate world, it was seen as an obscure thing. I did two articles for *Byte Magazine* about applying the Internet to corporate networking, and about the same time this publisher in Westport Connecticut with a newsletter called *Research & Education Networking* decided to rename it *Internet World*.

I got a call from Alan Meckler asking if I would like to be editor, and after thinking about it for all of 10 or 15 seconds I said yes. That was spring of 1992, and about a year later Alan called again and said they were going to turn IW into a magazine, so would I like to continue as editor-in-chief?

I did that for about a year, working part-time from home, and had a lot of fun. I didn't actually meet anybody from the Meckler organization or visit the office until three issues of the magazine had been published. After a year they shifted to monthly publication and needed someone in the office full-time. We couldn't relocate for family reasons, but I stayed on as a columnist for another year.

DOC: You describe yourself as being in "Internet show business" — tell me what that means.

DERN: I've been self-employed since 1988, and have for the last three years defined myself as someone who writes, speaks, consults and comments about the Internet and associated topics.

"All the stuff that's important to me, I can still do with my old Radio Shack 8088 portable."

I think it's important to focus on the impact of the online world to people and their lives; and the commitment to having things be doable and affordable, as opposed to escalating to the point where we mere mortals can't be part of the action. All the stuff that's important to me, I can still do with my old Radio

Shack 8088 portable with no hard disk, a 720K floppy and a slow modem.

DOC: I think your "Dehanced for Lynx" crusade is a kick. Could you talk about why shell accounts are sometimes better, and your efforts to empower text-only users?

DERN: With a shell account, there's a much lower learning curve and you can do it with an old \$100 computer. There are a number of fairly easy to use UNIX programs for using the Internet, and somebody else worries about (maintaining) them — your system administrator.

Lynx, Gopher and Pine are all examples of good text-only programs that are simple to use, and they don't break. And usually they're blindingly fast because you don't have to bring all that data back to your own computer over a phone line. That gives me a T-3 connection to the Internet through a 2400 bps modem.

Making a web site Lynx-friendly means showing a text message to Lynx users (via the ALT tag) where Netscape users would see a picture. Text tool bars (instead of clickable image maps) or links to text-only pages are other ways to ensure that Lynx users can navigate a site. This is important to blind users and others who don't want to spend hundreds of dollars to upgrade an older computer to run Windows.

My web page is completely accessible to Lynx users, and soon I'll even have a clickable ASCII image map and some interesting "Don't click here if you're using Netscape" links. Technology should be here to help people, not force them to spend money they don't have.

DOC: Do you think the Web is a hula-hoop fad? What comes next?

DERN: I will confess that because I've been using a shell account that I didn't pay as much attention to the sudden explosion of the multimedia and rich text aspects of the Web for longer than I should have. It has made stuff easier and more intuitive to use, but we're now hitting the wall on that as people try to use the Net as if it were a high-speed LAN.

If you look at the progression from FTP to gopher to the Web, those were in retrospect very linear jumps. But what's happened now is you have the browser, and with the extensibility of the Web, we may see new data types and applications but we'll still probably see it as "the Web" for the next few iterations.

On the other hand, the Web is terribly clumsy and hopelessly inefficient — it takes too long for things to come up, it's hard to find things, and it's controllability means that everybody is seeing a different experience, so it's very hard to develop for.



We're also starting to ask the Internet's infrastructure to do things that it wasn't designed for, like narrowcasting of TV, radio and other things that chew up so much bandwidth — it doesn't make a lot of sense.

DOC: Would you put something like PointCast in that category?

DERN: All of it... PointCast, RealAudio, etc. We wake up and the *Boston Globe* is right

on the front porch — it's already been delivered. It starts getting really wacky when you're having 50 (electronic) newspapers delivered to you on the off chance that you'll really need one of them. I'm concerned that the efforts to make the individual's experience better — the prefetchers, URL checkers and all that — may in the aggregate make things worse for everybody. We're ordering pizzas we don't eat.

The other side of it is, ... the Web, browsers, servers and all that, could go away tomorrow and I wouldn't give a hoot, as long as something else replaced it. Lotus Notes, a commercial robust version of Ted Nelson's Xanadu, or Dern the Curmudgeon's Super-Nifty Internet Information Application... you and I wouldn't care. We care about the information and communication, not the tools.

DOC: Speaking of tools, I've always gotten a kick out of the humorous items that have appeared in your tag lines over the years. Tell me more about that Internet Waffle Iron and the Internet Paper Airplane.

DERN: Well some of them don't exist, they're just silly experiments or stupid jokes, like the waffle iron. I was reading too many ads once and dreamed it up.

"It's a CD-ROM, a scanner and... a waffle iron!" That comes from reading *Mad Magazine* for too many years — a formative influence on me and my perspective. [Editor's note: *Mad* also had a cartoonist named Jack Rickard — no relation, but perhaps an influence on *Boardwatch's* perspective.]

The Internet Paper Airplane came out of teaching a number of sessions, seeing some questions that I couldn't easily answer, and feeling frustrated. I could say, "Well I have this 600-page book... you drop it and it goes thunk, and it costs a bunch of money," but it was too big an answer to their questions.

I wanted to develop a handout with the things that people seem to need after their first Internet encounter to answer the "how do I get started," "how can I find a service provider," and "what are some cool places to go" type of questions — all on a single sheet of paper.

DOC: You said the "meta" word just now and that reminded me of <http://www.Search.Com>, a new search engine that exists only to help you find other search engines. Do you think there are too many search engines now?

DERN: We already have far too many Internet indexes, and that's a bad thing because we don't have any that are good in a real way. We have a bazillion robots all doing the same thing, even if they're generating different databases. We need something where we can set a bit on a web page and have it mean something to a central index resource.

The whole question of finding something on the Internet remains a challenge. Search engines are draining a lot of resources and not offering the same value in return. Also, I think this business of advertiser-sponsored search engines is solving the problem the wrong way. I would like to see service providers have a local copy of a Yahoo-like database so we could search without burning bandwidth.

DOC: So you think there's merit to the notion that we should have one central mega-index for the Internet, run by InterNIC or some other organization?

"We have a million web indexes all trying to be billion-dollar babies — it's insane."

DERN: I think there would be merit to having some central funneling mecha-

nism. Archie became the defacto index for FTPspace, we have Veronica as the one index for Gopherspace, but we have a million web indexes all trying to be billion-dollar babies — it's insane.

DOC: You've always used humor as a tool to make your point. What gave you the inspiration for some of the songs and humorous pieces you've done?

DERN: There's a diverse heritage of insightful humor, parody, songs, jokes in the Internet community, and it's been a pleasure to add to that. They started happening when I began reading the COM-PRIV discussions, and I found that my opinions were taking root in song. I attended the BMI musical theater workshops for musical comedy songwriting for two years, so I think it's a lot of fun — but also song is a great way for people to approach issues.

DOC: I hope you'll be doing some of these in RealAudio and putting them up on your web page... Maybe "Dan Dern Sings Your Favorite Internet Songs"?

DERN: I'd like to do that. And I'd love to have them professionally recorded. I actually have notes towards 10 or 20 more songs—probably enough for a full musical or revue. When I'm speaking, I tell people they have to behave or I'll sing. I can write 'em, but my singing voice makes strong men weep and dogs run.

So the songs and the jokes are a pure linear progression of what I did all the way back to high school. I've continued to keep that as one professional expression of what I do and my persona, hopelessly destroying any chance of ever being taken seriously. I have the wacky

props, the fun demos and all that when I present, because in Internet show business it's very easy to have it be dry and boring. You have to wake 'em up.

DOC: Let's say you get to be Dictator Of The Internet for a day. What decrees would you issue?

DERN: We would instantly phase over to Usenet II, where user agreements and discussion charters are automatically enforced, to reduce the noise level. I would also recommend some subdivisions of Usenet, just because discussions with thousands of people are not practical. That's part of the challenge of managing growth — as things grow you have to change how they work.

I would mandate that all Web pages be Lynx-friendly. There would be no ISMAPs without an ASCII navigator, and thou shalt use ALT tags!

I'd also find a way for there to be a learning area and process that new users had to go through. The question is no longer "How do I use the Internet?", in the sense of what the commands are; it's now "How do I become an Internet user?" Just because people can pop in a disk and get online in 14 minutes, that doesn't mean they can use it productively.

DOC: You've done a lot of different things in terms of your participation in the Internet and the industries that have sprung up around it. What's next for you?

DERN: I'm doing a lot more of this "Intranet" stuff, consulting on the use of Internet technology within an organization's boundaries. It's a way for companies to start using the technology with-

out having the concerns of managing a connection to the "danger zone".

DOC: I'd be interested to know how you use the Internet on a personal level.

DERN: As a writer, I use the Internet as a communications tool. I use e-mail to query editors, talk to my sources, and send in manuscripts. I use my modem far more than my fax or voice phone for correspondence. The Internet is my billboard — I have my web site which includes appropriately self-serving information on what I do, examples of my work, etc.

It's great for information on hobbies. I'm a Pogo fan, a Gilbert & Sullivan fan, and I can find information on comic books as well. I'm not using it to buy anything... I've occasionally gotten information in order to buy things offline, but I don't need the Internet to help me buy stuff. It's a great way to get information if it's out there and can be searched. And it's been a way to meet people professionally and to make friends. It doesn't mean I'm friends with 20 million people, but it's great to meet people at an event after participating in online discussions or swapping personal e-mail for months or years.

It's a pleasure to be able to make my living being part of something I care about. It's important to me to not just report but to make sure the human aspect is brought to the fore. Ultimately, the Internet is not about bits, or terminals or computers—it's about people. It's about letting people communicate with one another, and without us people, there'd be a bunch of computers without much to say to each other. ♦

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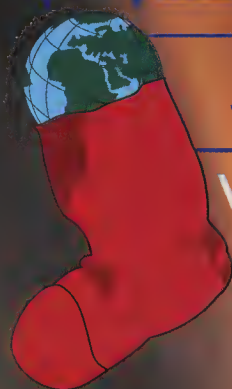
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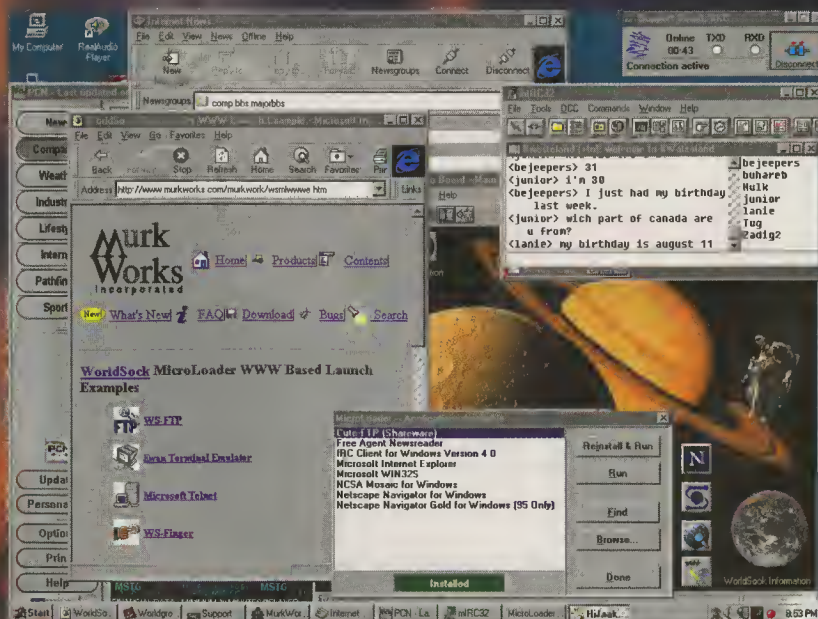
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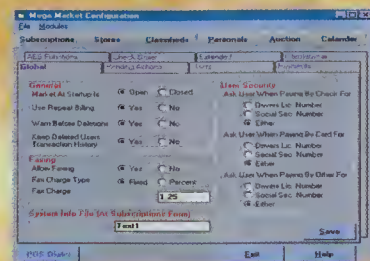
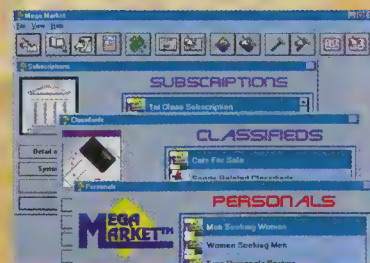
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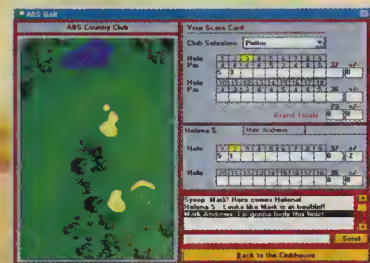
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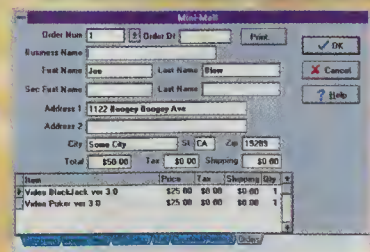
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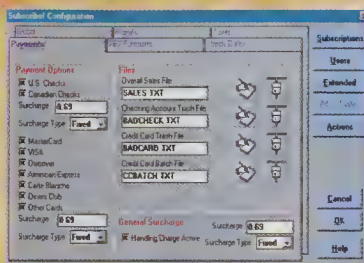
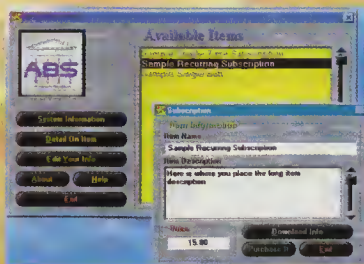
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DELPHI PEGS ITS FUTURE ON COMMUNITY

Delphi was arguably the first provider to roll out dial-up Internet access for the masses, way back in 1992. Man, doesn't that sound like ancient history? I got my first taste of cyber through Delphi back in those days and let me tell you, \$2.95 an hour for black & white command line Internet had me hooked.

With the right kind of marketing they could've been a huge success, but after being acquired by Rupert Murdoch's News Corp in 1993, a slow slide to near oblivion began. Seems like News Corp couldn't figure out how to fit Delphi into their communications strategy, so performance suffered while the interface stayed mired in the 80's.

I still have my Delphi account, but FTPing at 100 bps was not cutting it so I got a SLIP account from a local guy, said "Bye" to the clunky Delphi interface and forwarded my mail to a place where Winsock was spoken. Sure Delphi had a Web site, but it looked like an ad for the "X Files" television show instead of the online home of an Internet service provider. That alone told the world that News Corp. didn't have a clue about marketing Delphi, and users began defecting in droves.

But after floundering for a couple years in the shadow of AOL and CompuServe, the 15-year old Delphi looks like it might be back on track. The key to the turnaround lies in the re-acquisition of the company by former CEO Dan Bruns, who served at the helm from 1987 to 1994. Just like the Remington shaver guy, Bruns liked the company so much he bought it lock, stock & barrel this past April, re-assumed the position of CEO, and brought in Bill Loudon to get an edge on the competition.

Could this be the same Bill Loudon who helped to start CompuServe in 1980? The guy who founded GENie and then created the National VideoTex Network? Rumor says it's so, but I can vouch for the truth of it after chatting with Bill at the recent ONE ISPCON show in San Francisco.

FOCUS ON COMMUNITY AND PARTNERSHIP

Bill told me about his plans to position Delphi as the premiere place for online community building and then sell little pieces of their world to smaller ISPs who are hungry for content. "Even though communication is the heart of the Internet," Loudon says, "there are very few focused areas for people of similar interests to socialize and interact. After thirteen years of strong community building, nobody understands how to bring people together better than Delphi."



Dan Bruns, proud owner of the new Delphi

Delphi hopes to further expand its large collection of professionally moderated discussion groups into a showcase of helpful, friendly online communities covering everything from technology to hobbies. One feature is the Swash Zone, which provides web-related tips and advice for all levels, from how to use a search engine to implementing high-tech web sites.

Loudon says they borrowed the "swash" term from the surfing world, where it refers to the area between the beach and

the waves. It's an apt metaphor for the place that many new Web users find themselves in, and Delphi moderators stand in that gap to guide newbies to the point where they can become proficient at "surfing" on their own.

Delphi has also secured the services of John Dvorak and Jerry Pournelle, who regularly joust in the Flame Wars arena, and they offer multi-player games such as "Flight Simulator" and "Air Warrior." The ISP Partnership Program that Delphi announced at ISPCON packages their online community expertise and other services to ISPs, enabling the smaller shops to provide access to Delphi content. Loudon says that by offering Delphi services to ISPs, they enable ISP customers to join an active and diverse community environment not available locally.

In addition to differentiating an ISP's services from competitors, the Partnership Program also generates revenue for ISPs without any investment or site maintenance.

Participating ISP customers have the opportunity to activate a free trial Delphi account to explore the services, and may become Delphi members for a discounted fee after the trial period. For each new account, the referring ISP gets a percentage of the subscription fee for as long as the customer maintains their Delphi access.



Senior VP Bill Loudon plans partnerships with ISPs

Delphi encourages ISPs to put a "Bring Your Passion To Delphi" button on their home page, which allows ISP customers to explore all the wonders of the Delphi world via a Web interface. The access to Delphi is customized such that the ISP's name & logo stay in view, and Delphi identifies ISP visitors by IP address ranges.

The online services have traditionally differentiated themselves from the bare-

bones ISP shops by trumpeting their proprietary content, so this is an interesting move by Delphi. It could be a big plus for small to medium sized ISPs who are struggling with the issue of providing quality content. Many ISPs are trying to show customers they have something that the other "SLIP/PPP for \$14.95 a month" shops don't have, so they may find it attractive to sell their customers a slice of discounted Delphi instead of investing time and money in specialized content development.

SLEEPING WITH THE ENEMY?

On the other hand, the ISP runs the risk of losing a customer, since Delphi is also a nationwide dial-up provider. (The old command line clunker is still alive, but Delphi does offer SLIP/PPP service to those who prefer a graphical interface.) Throw in the fact that many of the services formerly found only on the commercial online venues are now popping up on the Web, and you might wonder if this deal is worth it for the ISP.

But apparently the idea is being received favorably by ISPs and their customers. "We've received a tremendous response from ISPs that view the Partnership Program as an opportunity to foster customer loyalty and enhance product differentiation," says CEO Bruns. And Lowell Gray, president of Massachusetts-based Shore .Net says that "providing low-cost access to Delphi's quality content is a great new benefit for our customers. This helps us set Shore.Net apart from the competition."

It's not hard to see why some people would prefer a rich set of discussion groups with experienced moderators to the anarchy of Usenet. And since Delphi offers 10 MB of disk space for personal Web page development, an ISP might not mind if his customers took a little Web traffic to someone else's server.

It's not really money for nothing, but it could be good business for ISPs who are savvy enough to sell a value-added ser-

vice and still focus customers on the unique benefits of doing business with a local provider. With a little luck maybe Delphi can give the big boys a run for their money and smaller ISPs a boost at the same time. ♦

CONNECTING WITH DELPHI

- Delphi Internet Services
- 1030 Massachusetts Ave.
- Cambridge, MA 02138
- <http://www.delphi.com>
- For ISP Partnership Program, contact:
- David Parker
- VP Marketing
- (617)441-4500 x4535
- (617)441-4902 Fax
- <mailto:david@delphi.com>



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ESPRESSO, ECLAIR AND E-MAIL, PLEASE

Cybercafés Introduce Newcomers to the Internet

by David Hakala

Whether you provide Internet service in New York City or Iola, Kansas, your biggest market segment consists of people who have never seen the Internet. They have no idea what they might do with it, and therefore little incentive to buy it from you. It's hard to explain the Internet to "virtual virgins" without sounding like an idiot ("You can surf the *what?*") — especially when you get to the part about buying a \$1500 computer in order to enjoy "free" e-mail. Even \$100 for a modem is a lot to expect from a cold prospect for something that promises to be a) of little obvious use and b) another \$20 per month.

But sit someone down at a Web browser and pretty soon they're begging for more. Many Internet Service Providers sponsor free or low-cost introductory classes aimed at the Internet-innocent, and these sessions are often packed with novices who later become customers. Hands-on demonstrations are definitely the way to sell Internet to the uninitiated. But even such intensive efforts miss the biggest part of the market: people who wouldn't miss a cup of coffee to see the Internet.

Enter the cybercafé — a place where people go for coffee and stay for Java. A place where people come to be with other people and end up asking, "What's *this* thing?" A recruiting station for cybernauts. Or to put it more formally, a food-and-beverage establishment which features public-access Internet terminals.

Café owners benefit from such a deal too. Coffee isn't news, but stir in a spoonful of Internet and you're worth at least a couple of paragraphs in the local newspaper. Mr. Business Traveler will buy a latte and eclaire while waiting to check his e-mail. All of the café owners we spoke with told of international visitors who heard about their cafés through the Net and came in specifically to log in to home base.

COFFEE, CAFÉS AND THE INTERNET — MADE FOR EACH OTHER

As FCC Chairman Reed Hundt notes elsewhere in this issue, "Starbucks is successful because its coffee is lawful, socially acceptable and completely addictive. Bandwidth is just like that. You can never get enough." If anything approaches the popularity of sex on the Internet, it's probably coffee. (An AltaVista search on "coffee" yields over 200,000 hits versus 300,000 for "sex.") There are coffee Web sites galore, where you can buy anything from green beans for roasting at home to \$3000 espresso machines. Coffee newsgroups endlessly debate how to brew the Perfect Cuppa.

It's not the brew itself that gets cybernauts all warm and fuzzy, but the feeling one gets from connecting with strangers who have had similar experiences — with coffee, tax audits or whatever. In talking about coffee, we affirm that we are among people "just like us."

Cafés enhance this tribal feeling by drawing a tangible line around the group, separating "us" from "them." Within the cozy confines of a café we are at ease, basking in the acceptance of our comrades. Paradoxically, it's when we feel most secure that we may be most willing to take a chance — like trying the Internet for the first time. So putting Internet terminals in cafés full of friends makes even more marketing sense than filling a classroom with strangers.

The trick is to convince café owners that the Internet will be good for *their* businesses. That's not a hard sell, as long as you don't oversell the profit potential of Internet terminals. Like all (surviving) businesspeople, café owners are profit conscious; but the successful ones are equally motivated by hospitality — a genuine desire to graciously entertain and serve people. If you try to sell the Internet solely as a profit center, you'll appeal to only half of a café owner's motives — probably the secondary half.

THE METROPOLIS BAKERY & CAFÉ — TWIN FALLS, IDAHO



"If this (Internet terminal) had to pay for itself, we'd have closed it down the first day," said Susan Ettesvold, Pastry Chef and Internet Queen of the

Metropolis Bakery in Twin Falls, Idaho. A "Cheers-y kind of place, where everyone knows everyone else," the five year-old Met is an award-winning bakery, a popular local breakfast/lunch spot, an arts and music venue and — since January, 1996 — Twin Falls' first cybercafé. It's a humble setup: one \$1500 80486 PC equipped with a 28.8 Kbps PPP connection. "We may add a printer soon," offers Ettesvold. Their Internet connection costs \$19.95 per month for 200 hours. Retail customers pay \$6 per hour on the honor system. "We tried a coinbox at first, but the quarters kept getting stuck," said Ettesvold. The machine sees about five users per day.

Most users are typical local residents: farmers, businesspeople, and "moms," mostly over 40 years of age. Searching for information about travel destinations, hobbies and collectibles are the most popular activities. Youngsters tend to use the terminal for homework research and Internet Relay Chat. Ettesvold says they've had only one "incident" involving porn.

Several international travelers have found the Met's Web page at <http://www.magiclink.com/web/metchef> and made a point of stopping by while touring the United States. Ettesvold recalled one European exchange student who wrote a month in advance of his visit to see if he could use the Met's terminal to send e-mail home. The owners of the Met are thoroughly pleased with the results of their Internet experiment. It hasn't made them a fortune, but it's made them new friends and given their old friends some new thrills.

MagicNet's Phil Jenkins says "a few" new dial-up customers have come from Metropolis referrals, but he doesn't closely track such things. Mainly, the Metropolis installation has sparked interest among other business owners, many of whom get their morning caffeine at the Met. Another public-access terminal will soon appear in the local print shop, another good place to troll for business accounts.

The Metropolis is probably a typical small café installation, no more complicated than putting a video poker game on the counter. Note that the money is pretty trivial — \$19.95 a month to MagicNet and perhaps as much per day to the café. But both parties realize acceptable profits. The Met gets a bit more variety, a few more exotic customers, a few more reasons for its fans to come more often and linger longer over coffee and eclairs. The ISP gets a few new customers and the legitimacy of being part of Twin Falls' most popular and trusted institutions.

If you provide Internet service in a rural area, your biggest marketing problem is probably defining the Internet and overcoming its "foreign" image. Put a terminal in the local coffee shop and see how quickly the locals "get it."

BOGEN'S – A CYBERBAR



The overwhelming majority of cafés are alcohol-free (one reason we did no face-to-face interviews for this story). One would expect a certain hesitancy to put a

\$1500 PC on a bar top that's typically awash in beer and pretzel crumbs by midnight. But Bill Ellenbogen, proprietor of Bogen's in Blacksburg, Virginia since 1982, wasn't deterred. He installed a Pentium 90 on a 14.4 Kbps line in September, 1994, and hasn't had any SWI (Surfing While Intoxicated) violations. The PC is in the bar but on a separate island counter well back from the spill zone. "In fact," recalls Bill, "We've never even had to change the mouse." They did, however, add a custom-fitted membrane keyboard cover.

"Computers will be the pay phone of tomorrow," declares Ellenbogen. "Imagine walking into a bar or restaurant and not finding a pay phone; what would you think?" Right now, though, he's not trying to make a profit with his Internet terminal; it's provided free of charge to all comers. Users include lots of Virginia Tech undergrads, graduate students and faculty; local business people for lunch; and families. They use the Net to get real-time sports scores and stock quotes, settle trivia bets and occasionally play interactive games. "One guy loves to drink beer and play backgammon" at the First Internet Backgammon Server (<http://www.fibs.com>). Soon he'll enjoy a faster game; Ellenbogen swapped some office space he owns to an ISP in exchange for a free T1 line.

Ellenbogen says he's gotten lots of publicity by being "the first Cyber bar" serving alcohol, including articles in *Esquire* magazine, the *Atlanta Journal-Constitution* newspaper and *American Airlines'* in-flight magazine. "I couldn't buy publicity like that," he notes. A few people come to Bogen's specifically to use the terminal, but for the most part they come for the food. The daily menu, from vegetarian burgers to charbroiled ribs, is displayed at <http://www.nrv.net/~bogens>.

The Metropolis Bakery and Bogen's are examples of what can be done in small, markets. You won't get rich off public-access Internet terminals, but you can add some flair and a few customers to a local coffeehouse. Mid-sized cities such as Denver and Las Vegas offer more opportunities for those who want them.

JITTERS – URBAN REALITY



Denver's lower downtown (LoDo) district is the bohemian section of town — art galleries, pawn shops, \$1.50 boilermakers, plenty of book stores and Jitters — a café par excellence, with over 160 varieties of coffee beans and tea leaves available. If you're patient, you can get a custom-built layered latte. Close to the Paramount Theatre, Jitters often attracts

musicians, poets and other performers for late-night impromptu jam sessions. The daytime clientele consists of business people and downtown residents — mostly 25 to 45 years of age and affluent — plus students from the nearby Auraria college campus. Nights and weekends see a younger group of suburbanites who come slumming.

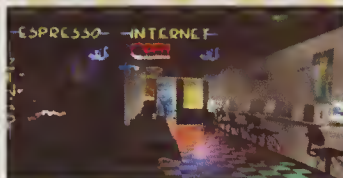
A dozen Macintoshes linked to a Windows NT server see lots of use, at \$4 for 30 minutes or \$7 per hour. (Students get free Internet access.) The Mac presence — unusual in cybercafes — probably reflects founder Matt Haggstrom's background in video animation production. Originally from Fairbanks, Alaska, Haggstrom earned an associate's degree in communications at the Colorado Institute of Art and then headed for a career in California's film industry. But an earthquake in 1994 decimated his employer, so he returned to the high country and opened Jitters in November, 1994. After reading an article about cybercafes, he added the terminals in July, 1995.

The Jitters crowd does more than e-mail and Web surfing. IRC chat is popular, as are live videocasts of national music events. A Pentium-driven Virtual Reality machine was recently added. And if that doesn't give you the jitters, there's plenty of coffee. This is truly a wired place.

Haggstrom hasn't abandoned his creative ambitions. Jitters is a test bed and showcase for The Java Factory, a bleeding-edge multimedia communications production company based at the same location.

As if one demolition wasn't enough for his career, Haggstrom faces another this October. The block on which Jitters resides will be razed to make room for a Planet Hollywood nightclub. No problem, says Haggstrom; Jitters will re-open across the street, with a two-level featuring a dance floor, billiards area, even more full-suit VR stations and networked gaming arena. The upstairs bar will serve coffee, tea and those disgusting "smart drinks" that are so good for you.

CYBERCITY CAFÉ – 24-HOUR GLITZ



decide where to start his CyberCity Café, nor was he mistaken.

Founded in September, 1995, CyberCity is a boom town, even at \$12 per hour or \$6.50 per half hour for use of its twelve Windows 95 120 Mhz 80486 terminals. These are supported by a T-1 line, providing plenty of bandwidth for IRC, Internet telephony, VR browsing and other forms of extreme web surfing. E-mail and telnet remain popular, particularly among business tourists.

Las Vegas, Nevada, is home to just under 400,000 people. But in 1994 the city played host to over 28 million visitors, many of them international business travelers. It wasn't hard for Joe Kendall to

CyberCity Café, like most of Las Vegas, is open 24 hours a day, serving beer and wine, "Computer Wings" (spicy chicken elsewhere known as "buffalo wings"), sandwiches, soups and salads. While declining to reveal numbers, Kendall says half of his revenues come from the Net terminals and half from more traditional café operations.

Kendall, a former power plant manager, is an active worldwide promoter. Half of his customers first hear about him on the Net. CyberCity Café has been written up in *Women's Wear Daily* and some Italian and Japanese publications. Reporters from CNN, Newsweek, Time and local news stations were invited to a recent wedding at the café, featuring a couple who met and courted in CyberCity's chat rooms. "Someone even invited Oprah Winfrey," said Kendall, though at press time she had not yet RSVPed.

Bankers who wouldn't talk to Kendall in 1995 are now inviting him to breakfast, he claimed. Possible ventures include franchising CyberCity Cafés and a "cyber casino." Gaming regulations make the latter a tricky proposition, but in Vegas all things are possible.

Denver and Las Vegas are both tourist towns. Any location that attracts out-of-town visitors is a good prospect for an Internet café. Possibilities include college and military sites, convention centers, natural and man-made attractions.

Of course, the really big cities are where most of the action is. Urbanites have been properly conditioned to want Internet by thousands of TV commercials broadcast by CompuServe, AOL, Prodigy, et. al., newspaper ads and mailings from dozens of local ISPs and telcos, and the general tendency of city-dwellers to live on the mobile bleeding edge of communications technology. Their jaded senses leap at the novel stimulation of Internet videoconferencing, virtual reality, MUDs and MOOs, network games and Java-animated Web sites.

Cafés are enjoying a renaissance in major metropolitan areas. The age of "cocooning" at home, tuned into HBO or Yahoo!, seems to be drawing to an end. People are getting out to be with one another F2F ("face to face") again. Alcohol is losing its central role as a social stimulant, partly because of health concerns and partly due to more stringent drunk-driving laws. Restaurants are popular venues for intimate gatherings, but every dining room is subdivided into small groups that rarely interact with each other. Cafés retain the sociability of taverns while offering an all-inclusive atmosphere where one can roam from table to table, making new acquaintances and joining new discussions.

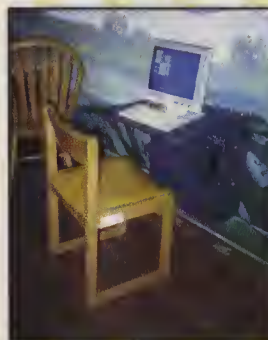
These are two very different desires – one for technological sensory stimulation and the other for good old-fashioned community. Both find expression in cybercafes, as the following examples show.

SFNET – THE ORIGINAL CYBERCAFE CHAIN

This is where the cybercafe phenomenon began, in August, 1991. Wayne Gregori and his wife Jill cooked up the idea in their kitchen, while pondering the discouraging future of their children in an increasingly fragmented world. "We discussed the dead end path of a society that is continually breaking itself into smaller and smaller groups," recalls Wayne, "subdivided by everything from skin color to hair color." The well-traveled Gregori believed that exposure to a variety of cultures and perspectives is essential to the development of a fully functional person. "My most important life's experiences had come from dealing with people outside of my social milieu," he found.

Determined to give his children similar opportunities to learn from people of different cultures, Wayne turned to Bulletin Board Systems as a way to establish dialogues between geographically and culturally diverse people. But "for the most part these people (who were online) were all white collar professionals, programmers, students and hacks," exactly the kind of people who, in those days, could afford the necessary technology and had the considerable technical skills necessary to use it. Unfortunately, these prerequisites yielded a rather homogenized culture, not the panoply of divergent perspectives that Gregori sought.

His solution to this lack of diversity was to make BBS technology affordable, accessible and simple enough for nontechnical people to use at first sight. "Affordable" turned out to be an endearingly humble PC-based text-only communications terminal, often cobbled together from used parts. (The monitor in the photo below cost \$10, the entire rig less than \$500). The terminals, ruggedized to allay any user's fears of breaking them, are activated by dropping quarters into coinboxes. Twenty-five cents buys five minutes of online time. That's three bucks an hour – definitely affordable. Monthly subscription plans are also available, which can bring the cost of peak hours time down to \$0.90 per hour.



**SFNet's \$500
public-access terminal**

Gregori made the terminals accessible by putting them in eighteen coffee shops around the San Francisco area, primarily in the culturally diverse but economically challenged parts of town. The placement of the terminals was part of Wayne's mission. "The simple act of putting a public terminal in a coffee house in a less than affluent neighborhood introduces technology to a few curious people who might otherwise live in the shadows of the technological revolution."

It also brought some nitty-gritty texture to the white-bread technocratic culture typical of a BBS community. "One never knows who will drop a quarter into an SFNet terminal," says Gregori. "Is he a she, or she a he... a criminal, prostitute, priest or politician? SFNet is as civilized or uncivilized as the community that surrounds it." The point was driven home during our trial visit to telnet://sfnet.com. (Use (415)824-8747 for dial-in access.) The conversation never ends, and it takes some startling turns.

Simplicity is another SFNet hallmark. The emphasis is on the words of the users, not the prettiness of the user interface. This is vintage ASCII text, with a basic color scheme and no IBM graphics anywhere. When you drop a quarter into the coinbox, the custom terminal software automatically dials the central BBS (running TBBS by eSoft Inc.) and you're prompted for a nickname and password of your choice. The menus are short, the functions are obvious and plain-English help is only a key-stroke away.

SFNet offers Internet e-mail and outbound telnet services, but not ftp, SLIP/PPP or even newsgroups. Gregorie cites concerns about downloaded porn and X-rated Web sites for these omissions. The users certainly don't seem to mind. They're busy talking to each other.

The SFNet BBS has thirty ports. Eighteen dial-up ports serve the cafés and the rest are available for SFNet members who

log on by modem or telnet from home, office and, in at least one case, Nigeria. Over 1200 members regularly use the system.

The café terminals average \$150 per month each in revenues, with some hot spots doing thrice as well. The café owners get 15 percent of the take. Peak traffic hours are between 7:00 p. m. and 1:00 a.m.

Gregori has plans to expand the SFNet concept, but he's in no big hurry to do so. Hospitals and hotels are places in which he sees a need for public-access terminals. National coffee house chains such as Starbucks are another possibility; such chains are more interested in creating private networks than in letting customers commune with people in competing cafés and elsewhere. Gregori's paradigm suits their needs.

For \$99, Wayne will send you the plans for his coin-operated public access terminals. An SFNet operation is not the road to an IPO, but it provides a comfortable living for the Gregoris and their children.

CYBERSMITH – THE ULTIMATE VIRTUAL PLAYGROUND



Cybersmith stands in stark contrast to SFNet's grass roots character. This is the Magic Kingdom of cybercafes, an ambitious Business Plan that capitalizes on all the hype surrounding the Information Age. The first store in Harvard Square cost a cool \$1 million.

The Internet is just an add-on in this place. For \$4.95, you get a passport to all of the 30-plus Macintosh and Wintel PCs in the place. You can play solitary or networked games with other patrons, review the latest CD-ROMs, test drive super game stations that are not even available in stores yet. Time on the Net costs an additional 17.5 cents per minute — \$10.50 per hour. Then there are Virtual Reality game stations, where you can don goggles and gloves to leave this world behind; the VR games cost \$5 per “experience.”

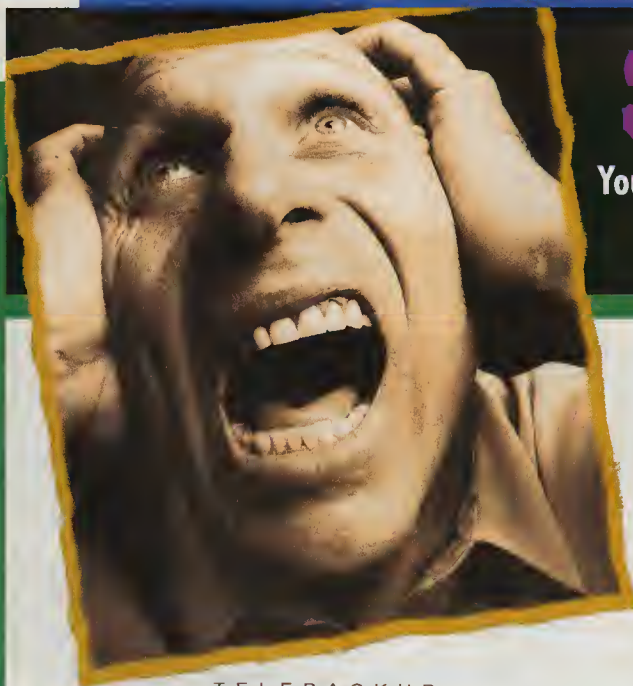
But Cybersmith is more than a maxed out penny arcade. It caters business meetings and media events, offers business-oriented classes in Web page design and Internet research, and even sponsors “Camp Cybersmith” for kids, a summer day camp and after-school program “for the child of the next century.”

Presently, there are three Cybersmith locations, in Boston and Cambridge, Massachusetts, and White Plains, New York. Palo Alto, California, is the next city to get a Cybersmith. Visit <http://www.cybersmith.com> for more current information.

“CYBERIZING” YOUR CAFÉ

The cybercafe model is infinitely scaleable. SFNet's simplicity and Cybersmith's extravagance mark the extremes of how plain or fancy you can get.

Most café owners who want to “go cyber” start with one or two Windows PCs (about \$1200 to \$1500 each, including modems and software) and 28.8 Kbps dial-up connections, which are commonly available for \$20 a month with virtually unlimited connect time. This is a do-it-yourself job; anyone who can



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unclog a sink drain can install a dial-up Internet terminal in about an hour. Some entry-level cybercafés, like the Metropolis Bakery, charge \$5 to \$10 per hour for use of the terminals; they expect the Internet to pay for itself while generating additional dining revenues. Others, like Bogen's, offer free access and consider themselves adequately compensated in publicity and extra customers. But direct profits from a one- or two-terminal installation will be negligible at best.

Up to ten terminals can be comfortably supported on a single 128 Kbps ISDN line, because users spend much more time reading what appears on their screens than they spend downloading it. A given user's data channel is idle during most of his session, allowing multiple users to share one line. (Of course, if all ten terminals are simultaneously downloading large shareware programs, performance will drop to about 12 Kbps per terminal – but that's still faster than most overburdened ftp servers can send files these days.) For this type of configuration, you'll need a 2B+D (128 Kbps) ISDN line from your local phone company, an ISDN Internet account from your Internet Service Provider, an ISDN router such as the \$695 WebRamp device from Trancell Systems (<http://www.trancell.com> or (888)4WEBRAMP voice), an Ethernet interface card for each terminal PC and some Ethernet cable.

The phone company and ISP charges vary; consult your local phone company and check the prices of several ISPs in your area, if possible. Ethernet cards cost about \$30 each. Then add the cost of the individual PCs that will serve as Internet terminals. Following is a rough first-year estimate based on prices in the Denver area:

ISDN Internet Link:	\$5,300 (over 12 months)
ISDN line (US West):	\$850 (over 12 months)
5 Internet terminals:	\$7,500
WebRamp router:	\$700
TOTAL:	\$13,550

Now let's assume you get \$6 per hour and average ten hours per day of use, six days a week. That's \$360 per week or \$18,720 per year. The Internet connection and ISDN line cost about \$118 per week, leaving \$242; the terminals and router (\$8,200 total) are paid for after about 34 weeks. From there on, your profit is \$12,854 per year (\$18,720 gross revenue less \$8,200, the cost of the ISDN line and ISP charges). Of course, you could start with fewer terminals and add more as cash flow permits. Each WebRamp will support up to 8 terminals.

A reasonably handy café owner – one who can not only unclog a sink but also install a new one – could probably install a WebRamp, run cables to the terminals and plug in the network cards. The ISP will help configure the WebRamp software with a DNS server address, a range of IP addresses for the terminals and so on. A few hours with Netscape and you're ready to open a cybercafé – or are you?

Can you keep five terminals busy for two hours per day each? Not in Twin Falls, Idaho, to judge by the Metropolis Bakery's experience. Bogen's, in a college town where 70 percent of households harbor PCs, seldom has people waiting for its one PC. A profitable cybercafé is not a "build it and they will come" proposition. Like anything else worth doing, it requires intensive promotion. Some tactics that can build awareness of and use of Internet terminals include Web scavenger hunts, events like the music webcasts at Jitters and network games in competition with other cybercafés.

An Internet terminal also needs more technical support than a pinball machine. Every café employee should be trained in the basics of Web surfing, newsgroup navigation, downloading files, and so on. Then they will have to take time to help novice customers get started, and answer perennial questions like, "What does '404: not found' mean?" Of course, they have to sell food and drinks – and smile – at the same time.

There are also days – many of them – when something goes wrong with your Internet connection. Then you have several people to interrogate: your staff, your telephone company, your ISP... and they will all disclaim responsibility for the problem. When your phone stops ringing, you know whose fault it is. When the Internet "goes down," it's nobody's fault.

If you'd rather run a café than wonder why your e-mail is bouncing, you might consider outsourcing your Internet problems.

TURNKEY SYSTEMS FOR CAFÉ OWNERS

CyberDiner Internet Café Systems of Pasadena, California (<http://www.cyberdiner.com/cyberdiner.html> or (818)798-0651) promises to take virtually all of the pain out of getting wired. The firm's Unix-based **CyberDiner™** system includes everything: billing and account management software, network server, workstations and Internet access software, network cards, cable, installation, site monitoring and maintenance. The company will coordinate installation of a frame-relay line with your phone company and connection to an Internet Service Provider. All you supply is space, electricity, customer service and money.

The CyberDiner folks think big and sell big. A ten-workstation system is the opening salvo in their sales literature, at \$28,000 to \$36,000 depending on the horsepower and options. Lease options are available. A monthly software license and support fee of \$100 per workstation covers ongoing site monitoring and system maintenance.

The Espresso Biega café is one of CyberDiner's sites, with five workstations on a 128 Kbps frame-relay line. The café opened in March, 1996, and added the Internet in April. Owner Phil Biega said the terminals are used "about 35-40 hours per week," or roughly 8 to 10 percent of their theoretical capacity – the café is open 7 days a week, 12 hours per day. At \$9.60 per hour, they should be bringing in about \$1450 to \$1660 per month. It costs \$1125 per month to run the system.

About 130 people have opened accounts on the Espresso Biega Internet system. The accounting is pretty simple; users deposit \$5 or \$10 at a time and the system warns them when their balances are getting low. Biega said that most users are male, in their 30s to mid-40s and about half of them are already familiar with the Internet. Some have dial-up Internet accounts at home, but they gladly pay for the high-speed access the café offers.

The Almost Paradise Café in Long Beach, California, is CyberDiner's first installation. Online since July, 1995, with seven terminals, the café boasts some 500 user accounts. General partner John Shull (yes, he's "Molor" the Klingon from *Star Trek: The Next Generation*) says, "We've had visitors from Virginia, Japan, Germany, Australia, Norway, New Zealand and New York" who found the café on the Internet. Bookings for business meetings are up, and the Southern California Computer Society now holds its Internet-related meetings at the Almost Paradise. Students from two nearby colleges have discovered the café and become regulars.

But despite these "bonus" customers, "We probably make more (money) on the yogurt," according to an employee who answered our call to the Almost Paradise. Given the up-front and ongoing costs of a CyberDiner installation, that didn't surprise us.

FAD OR FUTURE?

Internet terminals will not rescue a failing business; about ten percent of the cyberized cafés we tried to contact from a list compiled in February were no longer around. Nor do we foresee a business making a living on walk-in Internet service alone. Internet access is generally available in many other places at far less than a retail establishment must charge to earn a profit. You might as well open a store full of pay phones.

But like pay phones, public-access Internet terminals can give a competitive edge to a going concern. The cybercafes we surveyed all said that Internet access brings them customers who would otherwise sip coffee elsewhere. Until Internet terminals become as commonplace as pay phones, they can't hurt an otherwise healthy business and will probably help it attract customers.

Internet Service Providers should also treat public-access Internet terminals as an edge, not as a business plan. A terminal in the local coffee shop is a great way to introduce people to the Internet. A reasonable percentage of those who try the Internet over coffee will want it at home or in their businesses. It's probably worthwhile to give your local café manager a modest PC and a dial-up connection, and split the revenues from its use. Just make sure your name and phone number are prominently displayed on a sticker affixed to the monitor. ♦

THE SELECT LIST OF U.S. CYBERCAFES

Hoboken Coffee Warehouse	201-792-0707	http://www.netcorner.com/hcw/	517 Washington Street, Hoboken, NJ
Speakeasy Café	206-728-9770	http://www.speakeasy.org	2304 Second Avenue, Seattle, WA
Metropolis Bakery Café	208-734-4457	http://www.magiclink.com/web/metchef/netcafe.htm	125 Main St., Twin Falls, ID
Cyber Café	212-334-5140	http://www.cyber-café.com	273A Lafayette St., New York, NY
Internet Café	212-614-0747	http://www.bigmagic.com	82 E. 3rd St., Manhattan, NY
Java Island	214-491-1695	http://www.java-island.com	3020 Legacy Dr. #230, Plano, TX
Cyber Loft	215-564-4380	http://www.cyberloft.com	1525 Walnut St., Philadelphia, PA
Jitters Internet Café	303-298-8490	http://www.jitters.com	1523 Eighteenth St., Denver, CO
Majordomo's Netcafe	303-830-0442	http://www.majordomos.com	1401 Ogden St., Denver, CO
Almost Paradise Café	310-429-2066	http://www.cyberplace.com/paradise_ext.html	4148 1/2 Viking Way, Long Beach, CA
Cyber Java	310-581-1300	http://www.cyberjava.com	1029 Abbott Kinney Blvd., Venice, CA
Interactive Bean, The	312-528-2881	http://www.ibeans.com	1137 Belmont, Chicago, IL
Grind, The	314-454-0202	http://www.icon-stl.net/~grind	56 Maryland Plaza, St. Louis, MO
Red Light Café	404-874-7828	http://www.redlightcafe.com	553 Amsterdam Ave., Atlanta, GA
Coffeetopia	408-338-1940	http://www.webventure.com/coffeetopia/	13266-B Hwy. 9, Boulder Creek, CA
Plugged In Computers	408-395-5961	http://www.scruznet.com/~plugin01/	17550 Foster Road, Los Gatos, CA
Sheffield Pub-Sports Bar	413-229-7770	http://www.tiac.net/users/longleyr/spizza/	223 Main St., Sheffield, MA
ICON Byte Bar & Grille	415-861-2983	http://www.matisse.net/clients/bytebar.menu.html	299 9th Street, San Francisco, CA
Online - The Internet C@fe	502-456-0912	http://earth.maverick.net	2015 Longest Ave., Louisville, KY
Habit, The	503-235-5321	http://www.habit.com	2633 SE 21st Ave, Portland, OR
Techno Village	507-386-2665	http://www.techno-village.com	611 N. Riverfront Dr., Mankato, MN
Internet Café	508-228-9165	http://www.nantucket.net	2 Union St., Nantucket Island, MA
CyberCafe	520-774-0005	http://www.InfoMagic.COM/~cafe/	1520 S. Riordan, Flagstaff, AZ
Bogen's	540-953-2233	http://www.nrv.net/~bogens/	622 No. Main St., Blacksburg, VA
Congo Internet Café	602-946-5944	http://www.congo.com	2515 No. Scottsdale Rd., Phoenix, AZ
Bean Central	615-321-8530	http://www.isdn.net/bean/	2817 West End Ave, Nashville, TN
4 Friends Coffeehouse	616-456-5356	http://www.iserv.net/~4friends/	136 Monroe Center, Grand Rapids, MI
Café Liberty	617-492-9900	http://www.cafeliberty.com	497B Mass. Ave., Cambridge, MA
Designs for Living	617-536-6150	http://www.mynet.com	52 Queensberry Ct., Boston, MA
Cybersmith	617-547-8588	http://www.cybersmith.com	42 Church St., Cambridge MA
Cyber City Café	702-732-2001	http://www.cybercitycafe.com	945 South Maryland Pkwy, Las Vegas, NV
Al Cappuccino	714-870-7588	http://www.expresso.com/alcaps	1327 South Harbor Blvd., Fullerton, Ca
Common Grounds	716-633-4589	http://www.cgicafe.com	1420 Millersport Hwy., Buffalo, NY
The Mudhouse	804-984-6833	http://www.mudhouse.com	213 W. Main St., Charlottesville, VA
SurfNet Café	805-658-1287	http://www.surfnetcafe.com	1445 Donlon St., Ventura, CA
eCafe	805-897-3335	http://www.ecafe.com	1219 State St., Ste. A, Santa Barbara, CA
Coffee Haven	808-732-2090	http://www.aloha.net/~mawi/	1026 Kapahulu Ave., Honolulu, HI
Internet C@fe, The	808-735-5282	http://www.aloha-café.com	559 Kapahulu Ave., Honolulu, HI
Coffee Connections	810-344-0220	http://www.cybercafe.com	110 Main Centre, Northville, MI
Infohaus	813-878-2233	http://www.haus.net	2502 W. Azelee St., Tampa, FL
Café Kaldi	813-941-2326	http://www.cafekaldi.com	1568 Main St., Sarasota, FL
Internet Cafe Systems	818-798-0651	http://www.cyberdiner.com	999 North Hill Ave., Pasadena, Ca
Cup@Joe	919-828-9665	http://www4.nando.net/ads/cspot/	3100 Hillsborough St., Raleigh, NC



Frank X. Sowa is president of The Xavier Group, an international consultancy providing strategic planning, forecasting, training, and development of business and communications systems for organizations since 1981. As a certified software consultant for Softarc's First Class, and a reseller for other companies, he configures customized BBS systems for organizations, complete with "regular content updates." Sowa is also founder and sysop of SEED.NET (412) 487-5449, "the online incubator" for small businesses, a seamless BBS-to-Internet (PPP) provider, with business start-up assistance and seed capital available online. <mailto:franksowa@aol.com>

CYBERWORLD MONITOR

Frank X. Sowa

BACK TO THE FUTURE

Are you getting tired of the slowdowns on the Internet? ...bored while you wait for your files to appear on your web-browser? ...wondering when the Internet will finally catch up with the hype surrounding it? ...getting angry that the Internet backbone technology is failing? ...find yourself longing for the "good old days" when the Internet was a research project run by the National Science Foundation and the Defense Advanced Research Projects Agency?

Apparently, your federal government feels your pain. In the fall of 1993, Congress passed a \$1.15 billion budget for the NSF to continue building a High Performance Computing and Communications testbed that links the supercomputing centers together.

The budget continued to grow from 1994 to 1996 and is now estimated at close to \$3 billion. If early results are any evidence, the money appears to be well spent. Those of us who manage Internet sites on a shoestring may perceive a lot of wasted effort. But the NSF counters that "just getting government agencies to work together for this was miraculous!" Whenever any organization attempts a project of this magnitude, there are bound to be a number of false starts and unforeseen problems; but they've been kept to a minimum.

While the launch of this project probably mirrored the beginnings of the space race in 1960, few outside the research community have even been aware of its successes or its ramifications for the future of the Internet.

BUILDING THE WORLD'S FASTEST BACKBONE

The original goals of the program were to extend U.S. leadership in high performance computing and networking technologies; to disseminate the technologies to speed the pace of innovation and to serve the national economy, national security, education and the global environment; and to spur gains in U.S. productivity and industrial competitiveness.

Strategic objectives included the development of *teraops* computing systems capable of performing trillions of operations per second and the demonstration of gigabit networks capable of moving billions of bits per second.

The program was to design and support "gigabit testbeds" where R&D in advanced networking technologies could be conducted. These technologies included ATM/SONET (Asynchronous Transfer Mode/Synchronous Optical Network), interfacing ATM to HiPPI (High Performance Parallel Interface) and

HiPPI switches, and all-optical networking. A key feature of these testbeds was that each addressed an application that required gigabit-speed networks.

The goal was to achieve Teraflop-class wide area computing by the end of 1996. Initially, the nodes of the network were to be the top supercomputing sites. Creating a backbone between supercomputers as opposed to the old mainframes was necessary in this testbed, because the combined peak computing power of these supercomputers approaches a teraflop of available computing power. Much work was undertaken to make this distributed Internet environment behave as one facility.

Earlier this year, the new backbone took shape at the six NSF-funded supercomputer sites: the National Science Foundation site, the Pittsburgh Supercomputing Center, the Cornell Theory Center, the National Center for Supercomputing Applications, the National Center for Atmospheric Research, and the San Diego Supercomputing Center.

This new very high-speed backbone boasts of transfers via ADSL at 6 million bits per second versus today's fastest modem transfers at 33,600 bits. Its backbone supports speeds of 622 megabytes per second and the capability for nearly real-time downloads and simultaneous video, voice, animation and data transfers.

So far, the effort has uncovered some areas requiring further study and development, such as network security mechanisms for wide-area computing, advanced end-to-end network management, new collaborative application environments, and the mapping of applications to emerging infrastructure environments.

THE CREATION OF INTERNET "TWO"

As the experimental testbed for a new backbone took shape, it became apparent to NSF that such a research network could be extremely valuable in solving the traffic problems of the current Internet infrastructure (see "Cyberworld Monitor," *Boardwatch* September 1996).

In the Spring, NSF decided to expand the testbed to over 30 sites with a more concrete mission of creating the next-generation applications that will make the entire Internet more robust. The NSF has dubbed the high speed research and development WAN, "Internet Two," and spokesperson Mark Lugar sees the testbed "constantly evolving and passing on what is learned to the original Internet as quickly as it can be made available." "I see this as an ongoing proposition," he said on C-Span. "It won't stop with Internet Two. I see an Internet Three and Four in the near future, as well."

As the new Internet Two sites link up between September and January 1997, many of the scientific community at the Federal laboratories, the Defense and National Security community, and the Research and Development users at many Higher Education institutions in the U.S. are expected to move over to the new infrastructure. Lugar said that such a move should "free up" the original Internet to become a more robust commercial entity.

Lugar said that many of the problems that are restricting the commercialization of the original Internet "should be solved within the next few years using Internet Two." He added that once the traditional not-for-profit users move to the new testbed, "it will be easier to implement pay schemes, and incentives to finance Internet growth on the current network." It was estimated that about half of the current science/education users may eventually shift over to use the private Internet Two network through the testbed project.

In a discussion with Joel Barker, futurist and author of "Paradigm Shifts" earlier this year, he forecasted that "the original Internet — while remaining connected to new Internets — will in all likelihood 'Balkanize' by the 21st Century into a

number of specialized smaller Internets." He said the search engines, which were not available in the proprietary online world of the past, will keep all of the communities together and connected. "With the monies that are brought in by the adult entertainment industry, for example," Barker said. "I wouldn't be surprised if they wouldn't purchase their own network backbone and set up a highly-restricted public Internet of their own," he said. He went on to add that there are opportunities for a secondary-school education network, a business-to-business network, a health-care network, "and several other commercially feasible approaches."

NEW R&D RESULTS

Internet Two is tackling some very important Internet problems. It may also make a lot of the current Internet infrastructure (hardware, software, services) obsolete by this time next year. Perhaps the largest gains have been seen in improving base capacity, differentiating between traffic types (voice, video, text, animation, etc.), and establishing diversified communication paths for different kinds of supported traffic.

Lugar and the NSF feel that Internet Two will accomplish great things as a

testbed — especially in the area of developing new Internet applications and moving them to the forefront — then transferring them for commercial use on the original Internet. He said, "The future of the Internet will definitely be in high-speed networking Networking that supports video, audio, multimedia, data and textual transfers in real-time."

Lugar explained that some of the current projects on Internet Two include Digital Multimedia Libraries that are accessible in Virtual Reality; enhanced collaborative workplace communities where live digital video feeds offer many applications for virtual trade shows, conferencing, and collaborative computer-integrated manufacturing; and weather-forecasting and military-troop-movement monitoring enhancements.

When asked when these might become available on the original Internet, Lugar said that "a gradual transfer of these enhancements would take place over the next few years." To see some futuristic examples, and to gain more information on Internet Two, Lugar suggested looking at the following sites: <http://www.ncsa.uiuc.edu>; <http://www.vBNS.net>; <http://www.nlar.net>; <http://www.nsf.net>; <http://www.lightbulb.com>.



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END-USERS WILL NEED MORE BANDWIDTH

He cautioned however, that many of the enhancements will require major alterations in homes and businesses that would opt to use the new applications. "Currently these areas are wired for twisted pair and cable. While a lot can be done right now to get more use out of these wires, the dramatic improvements will only be seen when homes and businesses are rewired to support the next-generation of Internet video," he said. He added that the changes that will take place will be systemic. The alterations will occur at virtually all segments of the Internet — from the backbone to the home computer. But, he added that such technology advancements will eventually make the commercial Internet product easier to use, faster, and much cheaper.

"It's like the early days of the telephone," he said. "The wide use of the Internet is only a few years old. So far, people have been willing to put up with all of the idiosyncrasies and problems that are common when you take a research project and move it out into the commercial sector. But, I don't think the Internet will be successful for the commercial entity until

it is made more robust, so that it is no longer seen as a hard-to-understand technology, but like the telephone is seen as an everyday household appliance. To accomplish this, we need to see a lot of the enhancements we're developing on the next-generation Internet. We need to see things like voice, video, multimedia, and data, and we need to see it in a form that is so easy to use that the user forgets the technological wonders that are occurring to supply it."

Lugar said that such capabilities will evolve rapidly over the next few years, and he used the growth of web technology — which did not really exist before 1993 — as a model.

WHAT DOES IT MEAN TO ISPs AND END USERS?

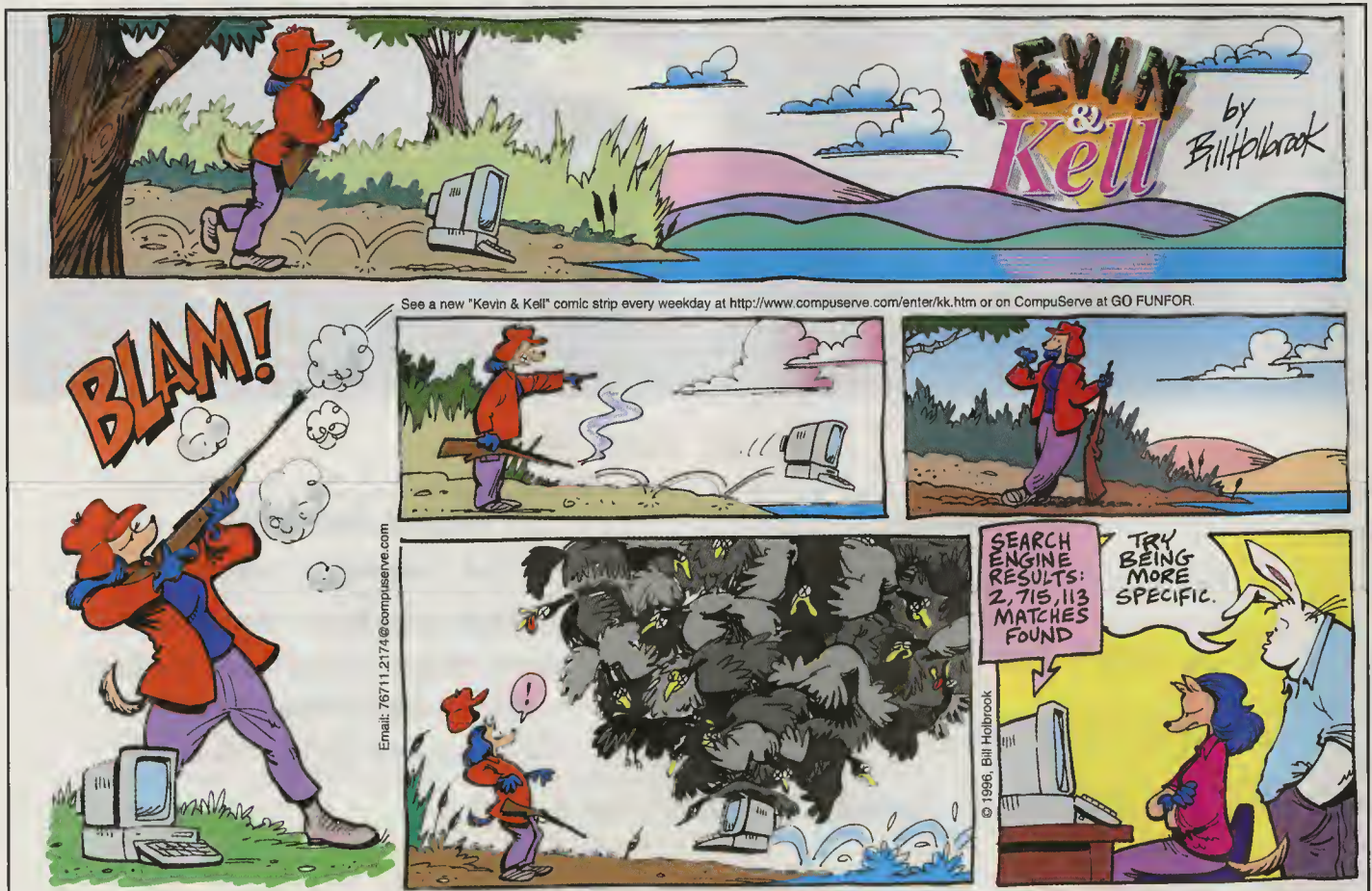
It means that the future for the Internet is both bright and at the same time murky.

On the bright side, radical improvements to the Internet mean that there is an ongoing abundance of opportunities to create new applications, sell new products to large business users, train administrators in ever-evolving standards, provide the "latest and greatest" Internet service offerings, and make money.

On the murky side, it may mean that all heavy investments in hardware, software, and services to date may become obsolete. As the Internet evolves into a more commercial entity, you may be forced to throw out the old (like many BBS sysops have done) and immerse yourself in the new technologies just to survive.

You may find the Internet to be a never-ending round of costly upgrades and radical system alterations to keep up with the new applications coming out of the Internet Two testbed. This may make it impossible for the small ISP to stay in the game and reap any financial rewards. It will definitely mean that the ISP business will not be the best place for the timid, or for the hobbyist. In any case, it is important to keep abreast of the changes taking place on Internet Two, because they will have major ramifications on your future.

For the user, Internet Two's spin-offs should prove fascinating, and meaningful. For those who haven't become familiarized with the Internet yet, Internet Two's advancements in video and multimedia for example, will make the use of the Internet by consumers and businesses much more likely in the near future — and at a much lower cost of entry than those who pioneered its use over the past three or four years. ♦



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Java Flavor of the Month

by Steve Graves

Status Bar Banners

This month we analyze four styles of JavaScript status bar banners written by Tomer Shiran, a very competent JavaScript programmer and HTML designer. Your navigator status bar usually delivers messages about URLs and the status of downloads. However, a clever JavaScript writer can use the status bar to deliver customized messages to readers. While status bar banners cannot display image files, they are much less intrusive than conventional banners and take no additional screen space. They also offer a touch of animation to your pages without incurring significant performance penalties. Webmasters can use status bar banners to deliver bulletins, create Burma Shave style promotional messages, display limericks or deliver plain old sponsor messages. Some users object to status bar banners because they interfere with normal status information such as connection status, download rate and so on. So we have even included a script that users can call to kill your banners.

ABOUT TOMER SHIRAN

Tomer Shiran is CEO of *NETtomer*, a web page design company. He is also an experienced C++ and Perl programmer. If you like these scripts, visit <http://www.geocities.com/SiliconValley/9000> for more samples of his work. Much of the comments in this column are based on a chapter from a forthcoming book by Shiran. You can contact Mr. Shiran at <mailto:yshiran@iil.intel.com>.

THE STATUS BAR

The status bar, located at the bottom of your browser window, displays the status of the document being loaded and the URLs to linked documents. The status bar is a property of the window object. In multiple-frame documents each frame has a property representing the status bar, but you should only refer to one of them to avoid conflicts. The status bar is represented by the status property; that is, **window.status**. You can also refer to the status bar of the current window via the property **self.status**. That's because **self** is actually a property of the window object that is the window object itself. Trying to read the content of the status bar will usually generate an error. However, you can set the value of the status bar, as you will see in the following script.

TELETYPE BANNER (T-BANNER)

This banner produces text from left to right, one character at a time. The effect is as if someone is typing

the characters. You see it often in techno-thriller films accompanied by the clatter of a teletype.

We first set the banner speed to 100 milliseconds, which is equal to the pause between each two characters of a message. We establish the pause in milliseconds between the completion of a message (string) and its deletion using the variable pause. The identifier for the current timeout is assigned null since no timeout is set yet. We assign the current state of the banner to the variable **bannerRunning** – initially the value is "false" because the script is not yet running. We then create an array **ar[x]** to hold the strings that are to be displayed as banner messages. The first string is assigned to the first element of the array, **ar[0]**, and so on. The script assigns the number 0 to the variable **currentMessage** because the first message displayed is **ar[0]**. The index of the last character displayed at a given moment in the status bar is assigned to the global variable **offset**. It is set to zero because the first appearance of the banner consists of only one character – the first whose index is zero.

We call the function **stopBanner()** to stop the banner. The current timeout is cleared if the banner is running. The variable **bannerRunning** is set to false because the banner is stopped.

We call the **stopBanner** function to make sure the banner is stopped, and then call the function **showBanner** to start running the T-banner.

We assign the current message to the local variable **text**. The function then continues in one of two directions. The first is elected if the current message is not displayed completely. Display is complete when the index of the last character displayed in the current message is the last character or less. In that case the expression **offset text.length** evaluates to true.

If the last character to be displayed during the pass is a space, the value of **offset** is incremented, so that the space character is not typed. The substring that needs to be displayed during the current execution of the function's block is assigned to the local variable **partailMessage**. Since the second argument of the substring method is the index of the last character plus one, it is set to be **offset + 1**. The current substring is displayed in the status bar, and the value of **offset** is incremented. The function is called once more after **speed** milliseconds.

When the end of the current message is reached, another execution path is needed. In this case the variable **offset** is assigned zero, the index of the first character of any string. The index of the array element holding the current message is incremented because the following message is next in the array. If the new value of **currentMessage** is out of range, it is set to zero, making the following message the first one. We call the function recursively after **pause** milliseconds. This time the function takes the first route, because the message is at its beginning.

The **startBanner** function is called when the **onLoad** event handler initiates and completes loading the document.

Steve Graves is founder of Technical News Service Inc. and Editor of *SysNews.Com - The Journal of Online Products and Services* (<http://www.sysnews.com>). Each issue, Steve spotlights a unique, practical, cool or otherwise noteworthy JavaScript application, which must be freely available for use by other Webmasters. If you have written or know of such a script, write to Steve at <mailto:editor@sysnews.com>. All reviewed scripts can be retrieved at <http://www.sysnews.com/centers/java/java.htm> where Steve also maintains a conference area for questions and comments about JavaScript. You can also subscribe to his Javascript mailing list at this page.

THE TELE-TYPE BANNER (T-BANNER) SCRIPT

```
<HTML>
<HEAD>
<TITLE>T-Banner</TITLE>
<SCRIPT LANGUAGE="JavaScript">

<!--

/*This banner produces text from left to right, one character at a time.
The effect is as if someone is typing the characters. You see it often in
techno-thriller films accompanied by the clatter of a teletype. */

// set speed of banner (pause in milliseconds between characters)
var speed = 100 // decrease value to increase speed (must be positive)

// set pause between completion of message and beginning of following
message
var pause = 1000 // increase value to increase pause

// set initial values
var timerID = null
var bannerRunning = false

// create global array
var ar = new Array()

// assign the strings to the array's elements
ar[0] = "I thought the good Doctor Munrow, "
ar[1] = "Knew every disease one could know, "
ar[2] = "Till he rendered distraught, "
ar[3] = "A poor sick astronaut, "
ar[4] = "By declaring he had "missile toe"! "

// set index of first message to be displayed first
var currentMessage = 0

// set index of last character to be displayed first
var offset = 0

// stop the banner if it is currently running
function stopBanner() {
    // if banner is currently running
    if (bannerRunning)
        // stop the banner
        clearTimeout(timerID)

    // timer is now stopped
    bannerRunning = false
}

// start the banner
function startBanner() {
    // make sure the banner is stopped
    stopBanner()

    // start the banner from the current position
```

```
    showBanner()
}
// type-in the current message
function showBanner() {
    // assign current message to variable
    var text = ar[currentMessage]

    // if current message has not finished being displayed
    if (offset < text.length) {
        // if last character of current message is a space
        if (text.charAt(offset) == " ")
            // skip the current character
            offset++

        // assign the up-to-date/to-be-displayed substring
        // second argument of method accepts index of last
        character plus one
        var partialMessage = text.substring(0, offset + 1)

        // display partial message in status bar
        window.status = partialMessage

        // increment index of last character to be displayed
        offset++ // IE sometimes has trouble with "++offset"

        // recursive call after specified time
        timerID = setTimeout("showBanner()", speed)

        // banner is running
        bannerRunning = true
    } else {
        // reset offset
        offset = 0

        // increment subscript (index) of current message
        currentMessage++

        // if subscript of current message is out of range
        if (currentMessage == ar.length)
            // wrap around (start from beginning)
            currentMessage = 0

        // recursive call after specified time
        timerID = setTimeout("showBanner()", pause)

        // banner is running
        bannerRunning = true
    }
}

// -->
</SCRIPT>
</HEAD>
<BODY onLoad="startBanner()">
</BODY>
</HTML>
```

RANDOM BANNNER (R-BANNER)

Now that we have a grasp of status bar properties, we can produce different effects. Our R banner produces messages by popping up various characters of the message in random order and then coalescing them into an understandable string. The message appears to coil, then spring. The effect, while striking, is produced simply by replacing three character spaces with a single character. A random algorithm generates the text characters at random intervals.

At first, we assign the number 10 to the variable **speed**, which represents the pause in milliseconds between character pop-ups. We assign a greater value to the variable **pause**, which determines the number of milliseconds separating the completion of the current message and its deletion. A null value is assigned to the global variable **timerID** while the Boolean value false is assigned to the variable **bannerRunning**. (We will use the **timerID** variable in the final script in this article to kill status bar banners.) We use an array to multiple part messages and populate the array with our own customized messages. The variable **message** is assigned zero, supposing that the first message to be displayed is the first element of the array, **ar[0]**.

The second section of global statements consists of only two statements, but they are the key to understanding the entire script. The first statement in this section assigns an empty string to the global variable **state**. The **clearState** function is called. It modifies the value of the global variable **state**, by assigning it **n** "0" characters, where **n** is the length of the current message. The variable **state** is constructed of 0s and 1s. If the first character is a 0, then the first character of the current message has yet to pop-up. The same applies to the second character, and all the following ones. The string starts off as all 0s. The message is finished when all characters are 1s.

At first the Boolean value "true" is assigned to the variable **full**. It remains true unless it is assigned false; that is, until the current message has been completed and **state** is full of 1s. An infinite loop cut by the **break** statement loops through all the 0 and 1 characters of the **state** string. If a character equals 0, the Boolean value "false" is assigned to the variable **full**. It is optional to break up the loop when a free space, or 0, is found since it has no effect here.

THE RANDOM BANNER (R-BANNER) SCRIPT

```
<HTML>
<HEAD>
<TITLE>SPROING</TITLE>
<SCRIPT LANGUAGE="JavaScript">
<!--
// set speed of banner (pause in milliseconds between addition of new
character)
var speed = 10 // decrease value to increase speed (must be positive)
// set pause between completion of message and beginning of following
message
var pause = 1500 // increase value to increase pause
// set initial values
var timerID = null
var bannerRunning = false
// create array
var ar = new Array()
// assign the strings to the array's elements
ar[0] = "Welcome to JavaScript Tips"
ar[1] = "Visit WWW.SysNews.Com Often"
ar[2] = "Join our Mail List to receive our JavaScript of the month auto-
matically."
ar[3] = "User our conference center to ask questions about particular
JavaScripts. "
// assign index of current message
var message = 0
// empty string initialization
var state = ""
// no value is currently being displayed
clearState()
// stop the banner if it is currently running
function stopBanner() {
    // if banner is currently running
    if (bannerRunning)
        // stop the banner
        clearTimeout(timerID)
    // banner is now stopped
    bannerRunning = false
}
// start the banner
function startBanner() {
    // make sure the banner is stopped
    stopBanner()
    // start the banner from the current position
    showBanner()
}
// assign state a string of "0" characters of the length of the current mes-
sage
function clearState() {
    // initialize to empty string
    state = ""
    // create string of same length containing 0 digits
    for (var i = 0; i < ar[message].length; ++i) {
        state += "0"
    }
}
// display the current message
function showBanner() {
    // if the current message is done
    if (getString()) {
        // increment message
        message++
        // if new message is out of range wrap around to first message
```

```
if (ar.length <= message)
    message = 0
    // new message is first displayed as empty string
    clearState()
    // display next character after pause milliseconds
    timerID = setTimeout("showBanner()", pause)
    // banner is now running
    bannerRunning = true
} else {
    // initialize to empty string
    var str = ""
    // built string to be displayed (only character selected thus far
are displayed)
    for (var j = 0; j < state.length; ++j) {
        str += (state.charAt(j) == "1") ? ar[message].charAt(j) : " "
    }
    // partial string is placed in status bar
    window.status = str
    // add another character after speed milliseconds
    timerID = setTimeout("showBanner()", speed)
    // banner is now running
    bannerRunning = true
}
}
function getString() {
    // set variable to true (it will stay true unless proven otherwise)
    var full = true
    // set variable to false if a free space is found in string (a not-dis-
played char)
    for (var j = 0; j < state.length; ++j) {
        // if character at index j of current message has not been
placed in displayed string
        if (state.charAt(j) == 0)
            full = false
    }
    // return true immediately if no space found (avoid infinitive loop
later)
    if (full)
        return true
    // search for random until free space found (broken up via break
statement)
    while (1) {
        // a random number (between 0 and state.length - 1 == mes-
sage.length - 1)
        var num = getRandom(ar[message].length)
        // if free space found break infinitive loop
        if (state.charAt(num) == "0")
            break
    }
    // replace the 0 character with 1 character at place found
    state = state.substring(0, num) + "1" + state.substring(num + 1,
state.length)
    // return false because the string was not full (free space was found)
    return false
}
function getRandom(max) {
    return Math.round((max - 1) * Math.random())
}
// -->
</SCRIPT>
</HEAD>
<BODY onLoad="startBanner()">
</BODY>
</HTML>
```


If the value of **full** is true, no free space is available because the message has been completed. The function is terminated and true is returned to signal that the space is full — the message has been completed. The remaining part of the function is executed only if free space is available. If this action was not implemented, the function would reach the state of an infinite loop.

Not all infinite loops are bad. We use one here to collect random numbers. The loop continues to execute so long as the space at that index (the one equal to the returned number) is taken up. When a free space is found, the loop is broken and the value of **num** continues as an index of a free space.

The value of **state** is updated by replacing the allocated space with a 1 character. The function is terminated as it returns false, indicating that the message was not completed.

As in the T-banner script, the **showBanner** function drives this script. Notice that the **getString()** function is called as a side-effect - not elegant but it works. Besides updating the value of **state**, it returns a Boolean value which is tested in the conditional statement. The conditional statement separated the function into two execution routes.

If the function **getString()** returns true, it means the current message has been completed. The current message is updated to the following one by incrementing the value of the message. This represents the index of the array's element which is the current message. After incrementing, if the value is out of range, that is, greater than the subscript of the last array element, it is reset by assigning it the initial zero value. The script calls the function **clearState** to set up the variable **state**. The function is called recursively after **pause** milliseconds.

There must be another route for the function for those instances in which the message is incomplete. In this case an empty string is assigned to the local variable **str**. This assignment is important because it is an accumulative variable. A "for" loop is executed to loop through each character of the string **ar[message]**. Characters are appended to the end of **str** (if there is a 1 at the same index of the string **state**) or another short string (if there is a 0 at the same index of the string **state**). We use a relatively long alternate string of a few spaces in order to create the right-to-left scrolling motion effect. Since spaces have a very small horizontal span (the font in the status bar is not monospace), if you use only one space the movement appears to be left-to-right. Using an empty string as the alternative string causes the string to appear out of nowhere, also a nice effect. The built-up string is placed in the status bar, and the function is called recursively after a pause of **speed** milliseconds.

BANNERKILLER

So you hate statusbar banners? The following script gives users a way of killing them. This script was written for David Hakala and like-minded souls who find status bar banners offensive. Just slip the following code anywhere in your document to create a button that launches the banner killer:

BANNERKILL CODE

```
<FORM>
<INPUT TYPE="button" VALUE="Load it!" onClick="var killerWindow =
window.open('http://www.geocities.com/SiliconValley/9000/killer.html',
'kill', 'width=200,height=100')">
</FORM>
```

The button is linked to a page that loads the banner killer and contains a **Kill Banner** Button. Clicking the Kill Banner button terminates the banner's execution. Users can call this page to kill *any* banner — not just those on your site. Our script assumes the **timeout** variable is called **timerID** as is customary. You may have to modify this if the variable is of another name.

The JavaScript statement responsible for terminating the banner is:

```
window.opener.clearTimeout(window.opener.timerID)
```

The "window.opener" specification references the Load Banner Killer window. **ClearTimeout** is a method associated with a given window object. **TimerID** is a simple variable in the opener window as previously mentioned. ♦

THE BANNER KILLER SCRIPT

Our first file **callkiller.html**, invokes the killer application.

```
<HTML>
<HEAD>
<TITLE>Invoke killer window</TITLE>
<SCRIPT LANGUAGE="JavaScript">

<!--
function openKiller() {
    var killerWindow = window.open('killer.html', 'kill',
    'width=200,height=100')
}

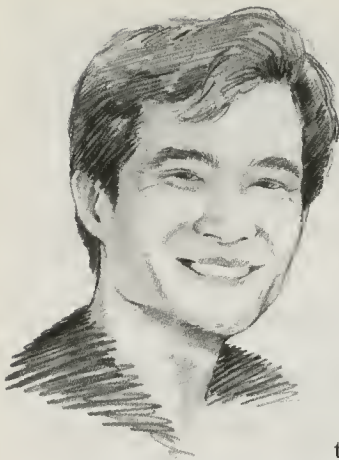
// -->
</SCRIPT>
</HEAD>
<BODY BGCOLOR="white">
<CENTER>
<FORM>
<B>Load banner killer...</B><P>
<INPUT TYPE="button" VALUE="Load it!" onClick="openKiller()">
</FORM>
</CENTER>
</BODY>
</HTML>
```

Killer.html executes the **clearTimeout** functions and kills the banner.

```
<HTML>
<HEAD>
<TITLE>Banner killer</TITLE>
</HEAD>
<BODY BGCOLOR="#ffffff">
<CENTER>
<B>Kill banner...</B><P>
<FORM>
<INPUT TYPE="button" VALUE="kill banner" onClick="window.opener.
clearTimeout(window.opener.timerID)">
</FORM>
</CENTER>
</BODY>
</HTML>
```

CORRECTION

Due to a misprint, we did not give complete credit to the author of our rotating sponsor banner script, John H. Keyes, creator and webmaster for the **JavaScript Cut-and-Paste Site** at <http://www.infohiway.com/javascript/indexf.htm>. Mr. Keyes wrote the original material and our version was edited by our JavaScript Technical Consultant Scott Walter.



Notes From The Underground by Wallace Wang

STALKING A COMPUTER VIRUS

Wallace Wang is the author of *CompuServe For Dummies*, *Procomm Plus for Dummies* and *Visual Basic for Dummies* (all published by IDG Books) as well as *Surfing The Microsoft Network*, published by Prentice-Hall. He also does stand-up comedy in the San Diego area, and has appeared on A&E's "Evening at the Improv" TV comedy club. He can be reached via e-mail at: 70334.3672@compuserve.com or botheekat@aol.com or bo_the_cat@msn.com

When most people find a computer virus lurking on their hard disk, the first reaction is to grab an anti-virus program such as The *Norton AntiVirus* or *McAfee's VirusScan*, and kill the virus as quickly as possible. The two common ways to kill a computer virus are to delete the infected file (which is like killing cancer by shooting the patient) or attempting a slightly riskier method of cleaning the infected file.

Cleaning an infected file means the anti-virus program tries to remove the computer virus program code from a file without harming the infected file. In many cases, a computer virus attaches itself so firmly to a file that removing the computer virus irreparably damages the infected file as well. When this happens, you have no choice but to delete the infected file.

But rather than delete an infected file or let an anti-virus program try to clean it, you might be interested in trying a third approach, if you like living dangerously — study the computer virus and dissect it.

Such amateur virus sleuthing can be interesting but dangerous, much like trying to make pipe bombs from plans you find on the Internet. Before attempting to isolate and dissect a virus, make backups of all your important files. That way if the virus gets loose and wipes out your hard disk, you won't lose everything for good. (Better yet, practice looking for a virus on a computer that you don't care about, such as an old computer or a computer belonging to your boss or disliked co-worker. That way if a virus gets loose and wipes everything out, at least your computer data will still be safe.)

DETECTING A VIRUS

Unless you have nothing better to do but look for all possible symptoms of a virus attacking your computer, your first line of defense should be an anti-virus program. Most anti-virus programs include a monitoring program that notifies you the moment a virus infects your computer. You can buy a commercial anti-virus program (such as The Norton AntiVirus), try a shareware version (such as McAfee's VirusScan), or use a free anti-virus program (such as F-Prot). To browse through links to the most popular anti-virus programs, visit the <http://www.nha.com> web site.

NH&A
anti-virus, security & network management

Anti-Virus News and Hot Links

Once you have a reliable anti-virus program that you trust, try capturing a virus using special *virus bait* files. Since computer viruses can only spread by infecting the boot sector of a hard disk, COM or EXE files, or any Microsoft Word documents on your computer, you can plant "dummy" EXE files on your hard disk. The moment a virus infects one of your "dummy" EXE files, you can safely start dissecting the virus. That way if you screw up completely and wreck the infected EXE file, you won't ruin any valuable programs in the process.

For a copy of a virus baiting program, download the **VC50.ZIP** file from <ftp://boardwatch.com>. This file contains an anti-virus program called **Victor Charlie**, which contains "dummy" COM and EXE files. Unlike more conventional anti-virus scanners that require constant updating to catch new viruses, Victor Charlie is a generic anti-virus program that never needs updating.

The main defense of an anti-virus program is its scanner. Most anti-virus scanners contain two parts: the actual scanner itself and a file containing virus "signatures," which are unique characteristics that identify specific viruses. Each time a new virus appears in the wilderness, the anti-virus company must create a new virus "signature" that tells the scanner how to recognize it. Because new viruses appear every month, anti-virus scanners will always risk missing a deadly new virus.

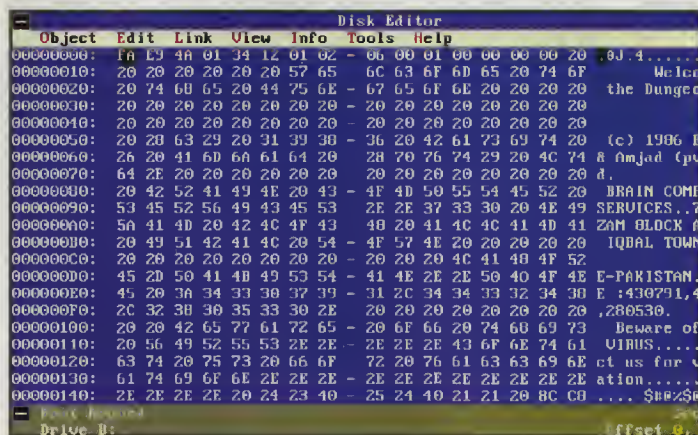
Victor Charlie is different though. Instead of scanning for viruses, Victor Charlie lets you plant its “dummy” COM and EXE files on your hard disk. The moment a virus infects one of these dummy files, Victor Charlie traps the virus’s “signature” for future use. In this way, Victor Charlie constantly updates itself.

Victor Charlie does have two big flaws. A virus could attack and destroy important files before attacking one of Victor Charlie’s “dummy” files. Until a virus infects a “dummy” file, Victor Charlie will never be able to detect that virus. Even worse, Victor Charlie can only bait viruses that attack COM or EXE files, not boot sector or macro viruses. Since the most common viruses are boot sector and macro viruses, don’t rely on Victor Charlie alone to keep your hard disk virus-free.

DISSECTING A VIRUS

Once you’ve caught a virus, the next step is to dissect it using a hex editor such as the **DISKEDIT.EXE** program found in the *Norton Utilities*, the *Hex Workshop* program (which is available at <http://ourworld.compuserve.com/homepages/breakpoint/hexhome.htm>) or the *EditPro* program (available at <http://www.winsite.com/info/pc/win3/util/editpro.zip>).

A hex editor lets you examine the sectors of a floppy or hard disk so you can see the internal guts of a computer virus. By using a hex editor, you can often find hidden messages buried inside of a computer virus without actually setting off the virus.



Hex editors reveal virus' inner workings

Besides letting you view the contents of a file, a hex editor also lets you modify that file. In the right hands, a hex editor could patch a faulty program, erase somebody’s name or registration number from a program, or let you add your own name or message to a program. Many software pirates use hex editors to crack copy-protected games or hide obscene messages in ordinary programs such as Microsoft Word or Lotus 1-2-3.

If you’re skilled enough with a hex editor, you can separate a computer virus from an infected file, such as one caught by Victor Charlie’s bait files. Once you’ve isolated a computer virus, you can go one step further and use a *disassembler* to convert the computer virus from working program to raw assembly language source code.

If you’ve trapped one of the increasing common Windows-based viruses, you can download the **W32DASM2.ZIP** file from the Boardwatch ftp site. This demo version can disassemble 32-bit Windows programs that are in the *Portable Executable Format* (PE), so you can use it to examine other Windows programs besides viruses. Unfortunately, this Windows disassembler can’t disassemble 16-bit programs and the demo version won’t let you print or save any assembler source code.

In case you run across one of the more common DOS-based computer viruses, visit the http://rasi.1r.ttu.ee/teave/msdos/simtel/simtel_index_disasm.html site where you can download a variety of different disassembly programs.

A disassembler works by converting an EXE or COM file into assembly language source code so you can see how a program actually works. Unfortunately, disassemblers are never perfect, which means that the assembly language source code that a disassembler creates may require slight editing before you can assemble it using an assembler such as Borland’s *Turbo Assembler* (the favorite assembler of virus programmers), Microsoft’s Macro Assembler, or the shareware assembler **A86.ZIP** which you can download from <http://lexitech.com/bobrich>.

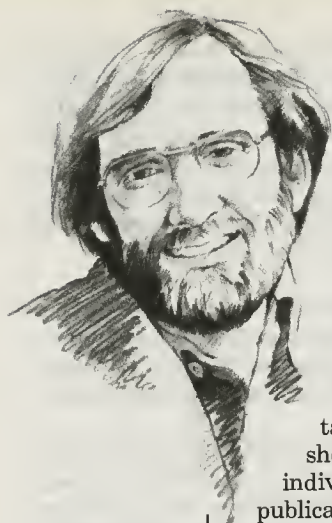
(Just in case you’re wondering, disassemblers can only create assembly language source code. They can’t convert an EXE or COM file into COBOL, C++, or Pascal source code. Since any program could have been written a million different ways using any programming language, a disassembler has no way of knowing which programming language someone may have used.)

After disassembling a computer virus and modifying the assembly source code, try assembling the virus back to its original form and run it to make sure it still works. (That way you can tell whether the disassembler worked correctly.)

By trapping, isolating, disassembling, and then assembling a computer virus, you can learn more about computer viruses than you could ever learn just by reading a book or using an anti-virus scanner. While virus hunting always runs the risk of letting a virus loose on your computer that wipes out your hard disk, it can be an amusing way to study a problem that will only continue growing as long as we rely on personal computers.

Since virus hunting is a skill that most computer science graduates never learn in college, any skills you pick up isolating real viruses could translate into a higher paying job, a new career working for an anti-virus company, or just plain fun, ripping apart computer viruses and witnessing the ongoing battle between virus writers and anti-virus programmers.

Then again, playing with live viruses could also translate into a wrecked hard disk or missing files so keep those anti-virus programs nearby in case a virus slips through your traps and starts shredding your data. Virus hunting isn’t for everyone, but with the right tools, it can be another skill you can develop that can enhance your computer knowledge. ♦



Rea Andrew Redd lives and works in southwestern Pennsylvania where he manages a high school library, teaches European history and Scholastic Achievement Test preparation. On occasion, he reenacts American Civil War battles with the Ninth Pennsylvania Reserves, an historic, military impression unit. E-mail Rea at: malito:redde@genesis.duq.edu

EDUCATION LINK

by Rea Andrew Redd

FACULTY RESOURCES AND CURRICULUM DEVELOPMENT ON THE NET

Often, by their very nature the best syllabi are very personal; they take advantage of the expertise of the instructor and what she/he knows about the student body. Because individuals can post their personalized work, and publication costs and profits are not a major issue, the Internet offers the best of both worlds; a relatively high degree of exposure to the professional world with the opportunity to amend the product at a minimal cost of time and money.

The *Clearinghouse of Subject Oriented Internet Resources Guides* has nearly 200 index entries, with many directly relating to education and pertinent subject fields. Each index listing, similar to a bibliography is easily downloadable. You can access this site in three ways: ftp or gopher at una.hh.lib.ed or via the Web at <http://www.clearinghouse.net>.

A more personalized approach is offered by Jim O'Donnell at the University of Pennsylvania; his WWW page, entitled *New Tools for Teaching*, is a fine example of a private and university attempt to improve the quality of education in the U. S. by providing current, professionally prepared, information to educators. Teaching resources and integrating them into your present curriculum is the topic of <http://ccat.sas.upenn.edu/teachdemo> and it returns every hour you spend there with a wealth of new ideas.

Since past issues are not a source of significant income, several publishers are allowing contents to appear on the Net, sometimes without a fee. The *Directory of Electronic Journals, Newsletters and Academic Discussion Lists* at http://www.nortcoast.com/~savetz/booklist.site_indices.html provides a searchable database of journal titles but not the text of the article itself.

To find the text of the articles, one of the best bets is *UnCover*, which is accessible through <http://www.carl.org>, <telnet://pac.carl.org> or by modem (303)756-3600. Chances are the Colorado Alliance of Research Libraries (CARL) will have what you are looking for among the 17,000 periodicals in their index. Searching the database is free. If you are in a hurry you can order the full text by fax for eight dollars or more. Otherwise visit your library and you have the option of interlibrary loan. UnCover also offers a special service to all electronic patrons, which was once only available to collegiate faculty; the contents page of new issues of journals and magazines, chosen by you, are sent to you via email. This is a free and very handy service provided by UnCover.

NLightN at <http://www.nlightn.com> accesses over 500 public/private databases and the Internet; search-

es are free as are the connections from any hits you obtain from the database. Citations to articles are in a brief format. The full text of an article costs ten cents.

Of course, not to be neglected in your search are the old fashioned, paper-intensive, library books. Electronic access to printed books usually starts with the Library of Congress (gopher://marvel.loc.gov or <http://www.loc.gov>) which has been discussed previously. Among the best of these electronic databases are *Hytelnet* via <telnet://laguna.epcc.edu>, <gopher://liberty.uc.wlu.edu> and <http://www.einet.net/hytelnet/HYTELNET.html>, and the University of Michigan via gopher://joeboy.micro.umich.edu and the University of Texas at <http://www.lib.utexas.edu/Libs/PCL/Etest.html>.

INSTITUTE FOR ACADEMIC TECHNOLOGY

Instructors of information technology and instructional resources should bookmark <http://www.iat.unc.edu> and browse it weekly. The Institute for Academic Technology (IAT), sponsored by the University of North Carolina at Chapel Hill and IMB, Inc., offers the Instructional Technology (IT) Monitor, Cybrarian's Desk and Search Desk. IT Monitor is a column by UNC faculty.

THE FAT LADY SINGS ON THE WEB

Sensing that her students might enjoy her "History of Opera" class even more than they do, Professor Patricia Gray (<mailto:gray@rhodes.edu>) required her students to explore the Web and participate in opera related discussion groups. With increased student enthusiasm, the Rhodes College instructor assigned the students to build a home page. The History of Opera Home Page at <http://gray.music.rhodes.edu/musichtmls/Music121opera.html> includes a documentary of an opera production, a dictionary of opera terms, and some samples of music. Students developed a sense of peer criticism, enthusiasm for cooperative group projects and a higher achievement of accuracy and style. Patricia Gray invites e-mail concerning the electronic tools, projects and resources concerning the Opera Home Page.

ELECTRONIC COLLEGE APPLICATIONS

The American Medical College Application Service (AMCAS), which processes the majority of U.S. medical entry forms, now offers an electronic, downloadable version at its Web site (<http://www.aamc.org>). The Student Loan Marketing Association, fondly known as Sallie Mae, is the largest source of funds for student loans. The publicly held corporation now has a WWW page at <http://www.salliemae.com> which

offers interactive calculators with formulas for college costs, loan repayment schedules, checklists for choosing lenders and financial aid packages.

THE K-12 BROWSER

Pierian Springs, Inc., noted for its Digital Chisel product, has released Fractionator, an interactive math application. Java-based and a pilot product for K-12 curriculum, Fractionator can be browsed at <http://www.pierian.com>.

Promoted as the "The World's First OnLine Library," The World Wide Web Virtual Library is maintained by the creators of the WWW in Europe and the U. S. Containing links to hundreds of thousands of online sites with information about everything imaginable. As such, it is always being improved and some difficulty might be encountered when you visit <http://www.w3.org/hypertext/DataSources/bySubject/Overview.html>.

Teachers teaching teachers. Tutorial sites are popping up frequently. An Internet training course for K-12 instructors and administrators is online and free of charge; visit it at <http://www.hcc.hawaii.edu/iss> and take the "Internet Survival Skills 101" course. Another newer site provides classroom educators with source materials, lesson plans, group activities for beginner Internet browsing. First time online? This should be on your short list of places to visit; go to <http://www.ceismc.gatech.edu/BusyT> and feel comfortable in a low stress environment.

For the more experienced Net educator with an eye to integrating the WWW into class activities, visit <http://www.indirect.com/www/dhixon> for a host of profitable group activities. Another site which offers K-12 lesson plans is <http://teams.lacoe.edu/documentation/places.lessons.html> or gopher/ericir.syr.edu:70/11/Lesson. If you are exploring the notion of creating a WWW page with your students then visit <http://k12.cnidr.org:90/htmlintro.html> and you will have at your finger tips the guidelines for a successful class or individual project.

Let your students "play doctor;" <http://medicus.marshall.edu/medicus.htm> is an interactive site that allows students to examine an imaginary patient who complains of assorted aches and pains. The "doctor" asks questions of the "patient," takes x-rays, consults texts, makes a diagnosis, and prescribes medicine. Though designed for the high school and above student, the bright junior high student will have fun here also.

For the younger student, well just about anyone who is interested in life underground, there is <http://www.nj.com/yucky/worm> which takes you to visit life beneath the lawn. Earthworms, simple life, and organisms that cannot be seen with the naked eye are yours to behold. Wendell Worm is your tour guide and he is not bashful about introducing you to his extended family and their simple home.

THE COLLEGIATE BROWSER

Biology and Chemistry

The European Molecular Biology Network Newsletter is available at <http://www.ch.embnet.org/embnet.new/info.html> for researchers who work with molecular-biology data on computers. The site contains a newsletter, which offers conference information, training announcements, tips and help for those who work with computers in their research. Links to European site are available; you can also gopher://embnet.news. The American Chemical Society can be accessed through

<http://pubs.acs.org> and offers an electronic edition of *The Journal of Physical Chemistry* where users can browse, retrieve articles, and conduct keyword searches. The articles in the journal can be displayed in both interactive text or in page images; Adobe's Acrobat is used at this site.

Medicine and Health

Neuroscience-Net at <http://www.neuroscience.com> contains information on research in the fields of anatomy, molecular biology, pharmacology, psychiatry, psychology. The Massachusetts Medical Society offers access to the electronic edition of the renowned New England Journal of Medicine at <http://www.nejm.org>. The site has the full text of many of the journal's pages; such items as abstracts, articles, book reviews, editorials and case records; full text of articles not available at this site can be ordered electronically. Amadeus Multimedia Technologies Ltd. offers HeartWeb, an electronic cardiology journal, at <http://webaxis.com/heart/web>. The site offers case reports, slide presentations, keyword searches, and full-text articles; don't wait for Valentine's Day to visit. For discussions, resource sharing and support of physicians who serve rural communities, subscribe to the Rural Doctors mailing list; send an e-mail message to <mailto:listserv@rhc.coos-bay.org> with the words **subscribe rural_doctors** in the body. The Healthcare Review is an electronic edition of a print journal which focuses upon Maine, Massachusetts, New Hampshire, Rhode Island and Vermont; <http://www.mednexus.com/hcr> also links to back issues of the journal.

Social Sciences

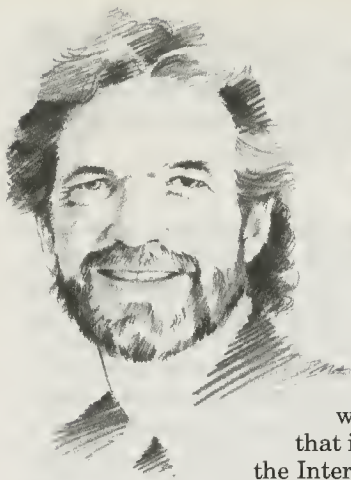
The Balch Institute for Ethnic Studies may be accessed on the WWW; its museum and library collection relate to America's ethnic, racial and immigrant historic communities. Descriptions of the collections, exhibitions schedules, abstracts of past roundtable discussions, and images for the archives and library are available at <http://www.libertynet.org/~balch>. In Motion, an online multicultural magazine, offers users the news and pertinent information related to grassroots organizing of social change. The working class and communities of color are the focus of this journal which is located at <http://www.inmotionmagazine.com> and presents articles on civil rights, education, health care concerns for both rural and urban America.

The Smithsonian Institution Libraries have accessed Native American and Western Frontier editions of some rare books; visit <http://www.sil.si.edu/elecedns.htm> for a small but amazing collection. The Encyclopedia Mythica is available for those interested in folklore, mysticism, and mythology; <http://www.pantheon.org/myth> accesses a database relating to Chinese, Greek, Native American, Persian and other cultures.

The Association for Religion and Intellectual Life (ARIL) at <http://www.aril.org> presents Cross-Currents, an electronic journal focusing on the major religions of the world. Articles, book and film reviews, music and conference/workshop announcements, as well as links to other Web sites, are at ARIL's WWW page.

MEMO FROM THE DEEP POCKETS DEPARTMENT

Research Grant Guides Inc., has published the *Directory of Computer and High Technology Grants* (3rd edition); arranged by state, by subject area, and with over 500 listed sources for funds for hardware, libraries, higher education, and networking. Get a copy from RGC, Inc., Department 3A, P. O. Box 1214, Loxahatchee, FL 33470; their phone number is (407)795-6129. ♦



MANNING THE WIRES

by Ric Manning

SHOPPINGLINK AND PEAPOD BRING GROCERY SHOPPING TO THE DESKTOP

There were a lot of jokes about "virtual pizza" a couple of years ago when a Pizza Hut in California announced that it would begin taking delivery orders over the Internet.

But today nobody's laughing at *ShoppingLink*, a company that will not only bring pizza or fried chicken to your door, but will also deliver everything from applesauce to zucchini.

Ric Manning writes about business technology, computers and consumer electronics for *The Courier-Journal* in Louisville, Ky. His weekly column called *Home Tech* is distributed to more than 80 newspapers by the Gannett News Service and it's available on the World Wide Web <http://iglou.com/gizweb>

Ric was the founding editor of *Plumb* and *Bulletin Board Systems*, two newsletters that covered the BBS arena in the early 1980s. His freelance work has appeared in several magazines including *PC/Computing*, *Mobile Office*, *PC Week* and *Home Office Computing*. Ric lives in Southern Indiana with his wife, two children and a champion Weimaraner. Write to Ric at mailto:ricman@iglou.com



Busy people pay \$9.95 to save a trip to the grocery store

ShoppingLink, a service of Maryland-based Shoppers Express, has hooked up with Kroger in Dallas, Texas, and the Vons supermarket chain in Southern California to sell groceries over the World Wide Web.

Shoppers Express has been pursuing the home shopping market for several years. It still works with grocery chains in about 20 markets to provide home delivery of orders placed over toll-free phone and fax lines. It also experimented with an order service on America Online and with Tim Warner's Full Service Network.

Shoppers Express bailed out of AOL in part because it found AOL's proprietary system too restrictive. "The Web is much more user-friendly," said Alice Fawver, ShoppingLink's director of consumer marketing.

The initial home shopping services appealed to a rather small market, primarily elderly or disabled people who couldn't shop for themselves. The new Web-based service launched last summer is aimed at the heart of the busy boomer demographic: "dual workers, mothers at home and time-compressed people," said Shoppers Express President Rich Olson.

That group appears willing to pay ShoppingLink's \$9.95 per order fee (\$11.95 in Los Angeles) to avoid the time and trouble of a trip to the grocery store.

"I love shopping by computer," said Ginny Miceli, a single mother who runs a trucking company in Chicago. Miceli places her grocery orders through *Peapod*, a home shopping service that operates in Chicago, San Francisco, Columbus, Ohio, and New England. Peapod (<http://www.peapod.com>) is likely to be ShoppingLink's main competitor for the online grocery business. Peapod charges \$4.95 per

month and 5 percent of each order. Peapod also uses proprietary software which can be downloaded from its web site.

Nutrition Facts

Serving Size 1 Cookie
Serving Per Container 15
Amount Per Serving

Calories	Calories from Fat	% Daily Value
150	62	
Total Fat 8.0g		16%
Saturated Fat 2.0g		4%
Cholesterol 2.5mg		5%
Sodium 79.0mg		3%
Total Carbohydrate 18.5g		6%
Dietary Fiber 0.9g		4%
Sugars 9.5g		
Protein 1.5g		
Vitamin A 2%	Vitamin C 2%	
Calcium 2%	Iron 4%	

% DV's based on a diet of 2,000 calories a day.
% DV's reflect "as packaged" food.
Product is marked with a Kosher symbol.

Click Here For Disclaimer Information

Peapod offers detailed data on grocery items

Miceli says she's the sort of computer user who hasn't yet found a compelling reason to get online, to explore the Web or to use e-mail. But when local Jewel stores offered the Peapod service, she was there in a flash. "It's easy to use and I sure don't miss going to the store," she said.

She's not alone, either. Andersen Consulting predicts that by 2000, home delivery sales of restaurant meals and groceries will jump from 1 percent to as much as 8 percent of the \$800 billion Americans spend each year on food. Andersen also predicts that as many as one-third of the existing supermarkets will disappear in the next five years.

And why not? Grocery marketing research says most people buy the same items and the same brands every time they shop. You don't need to be pushing a cart up and down the aisles to do that. ShoppingLink officials say their customers also aren't reluctant to use the system to buy fresh meat and produce either.

The company plans to expand ShoppingLink into several new markets later this year. The list of likely expansion sites include areas where chains already use Shoppers Express' phone service: QFC stores in Seattle, Winn-Dixie stores in Atlanta, Louisville and Tampa and Jacksonville, Fla., Food Town in Toledo and Farmer Jack stores in Detroit.

Anyone with Web access can get a taste of the ShoppingLink system by checking in at the company's home page (<http://www.shoppinglink.com>). Olson said ShoppingLink's database lists about 22,000 products — about 70 percent of a store's total inventory but 95 percent of the store's typical sales volume.

Shoppers can search for a particular item or browse among about 40 categories such as canned fruit, snacks or cosmetics. Each entry displays the item's brand name, package size, price and unit price such as the cost per ounce.

Let's see, do you want the 5-oz. bag of Barbara's Amazing Blue Tortilla Chips for \$1.99, the 14-oz. package of Mission Original Tortilla Strips for \$1.89 or the 13-oz. Eagle Restaurant Tortilla Chips for \$1.69?

The prices are set once a week, usually on the day when the food sale ads appear in the local newspaper. Prices are also keyed to the customer's location.

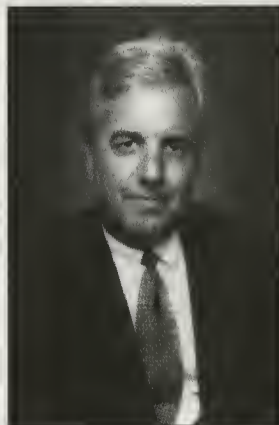
"Retailers have zoned pricing with variability on certain items," said Olson. "Prices may differ from store to store. The system checks your Zip code and shows you prices from the store closest to you so if you live in Burbank, you might see prices that are different than what someone in another part of Orange County would see."

When a store employee actually fills a basket with your order, the items are scanned through the store's checkout system, so you pay the same price that you would if you had gone to the store yourself.

Like a real store, ShoppingLink also honors discount coupons. Before you check out the system asks you to enter the face value of all the coupons you intend to use. At the checkout page, ShoppingLink asks for a credit card or check information. Then you can schedule your delivery time within 90-minute blocks.

ShoppingLink will let you store your shopping list online, so you don't have to recreate it with each visit. And you can have more than one list — one for Grandma, for instance, and another for the social club.

Fawver said ShoppingLink's new software, scheduled to be released this fall, will give shoppers even more control. For example, it will display nutrition information along with product prices and it will allow sorting within categories.



**Shoppinglink's CEO
Rich Olson**

"You can go into the cookie aisle and find the lowest price on your favorite cookie," she said.

Some items will be linked to online recipes or to special promotions or discounts offered by the manufacturer or the store. "There might be something that tells you what's new and exciting this week at Winn-Dixie — a special on 2-liter Coke, and by the way, here's the special in the bakery or deli," Fawver said.

The system also will have more than 10,000 images online. "A lot of consumers indicate that they want to see the product to make sure they have the right one," she said. And it will allow you to enter comments with your order. "If you want six bananas and you want three of them ripe and three green, you can enter that," said Olson. ♦

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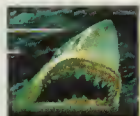
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by Bill Gram-Reefer

THE DEREGULATION FEEDING FRENZY

FCC RULES RILE RBOCS

"As I have stated before, the 1996 Telecommunications Act and our implementing rules are designed to fulfill the congressional intent to introduce competition." — FCC Chairman Reed Hundt.

Well, at least that was idea, as the FCC split the difference between what the local phone companies wanted and the desires of the long line companies. But in reality, the FCC has turned the wisdom of Solomon into the telecommunication industry's equivalent of Bosnia. With no Dayton Accord in sight.

The new rules handed down by the FCC in August have been slowly digested by the major players and some — like SBC, GTE and BellSouth — are gearing for big battles and court holding actions that could slow the introduction of real telecommunications competition to a crawl. And perhaps not without merit, as some RBOCs complain, since the FCC orders require the companies to make seven specific services available to new competitors who are intent on entering markets simply to cherry pick the best customers away from the local companies.

Cable companies, too, have something to complain about. They fear the recent rules give telephone companies the right to provide new forms of video programming before TCI catches up or catches on, whichever the case may be.

The RBOCs' big gripe is that companies like AT&T are given a serious competitive advantage as they enter local markets because they will be able to buy and resell discounted services from the local exchange carriers (LECs). By simply reselling services like local, long distance, paging and cellular services at discounted prices, competitors to the RBOC oligopolies have the opportunity to take away revenues and profits on the strength of their own nationwide brand identity and reputations. All that without having to invest in building any local infrastructure of their own; one of the shibboleths of the Telecommunications Act of 1996.

It appears the Congress actually believed that competitors looking for a quick and dirty entry into new markets would spend valuable resources like man-

power, capital, and advertising dollars on building new phone systems in existing markets. This way, Congress could claim responsibility for creating all sorts of new high-paying Glen Campbell lineman-for-the-county jobs. With all that rewiring to be done, an eager auto industry also stands ready to supply hundreds of thousands of new mini vans to cable and telephone companies alike.

Yet, odd bedfellows like the National Cable Television Association, GTE, BellSouth and others are in a lather. No company is more steamed than Texas-based SBC Corporation. SBC veep Dan Hubbard, noting the FCC's focus on facilities-based competition, has accused the FCC of ignoring the Telco Act, especially with respect to the resale of unbundled networks. "What may result," warned Hubbard, "is simply a race to slap different brand names on a fixed set of services... where the only innovation will revolve around the next great marketing promotion."

.....
**For FCC
Chairman
Hundt's
view of
deregulation,
see page 70**
.....

Southern New England Telephone Company's (SNET) president Ron Serrano said, "The order discourages telecommunications competition rather than encouraging it by requiring local companies to subsidize their competitors' entrance into local markets. The order gives some of this country's biggest corporations a free ride into local markets." Serrano also noted, "The consumer won't win in this sort of environment. It's like requiring a local pizza parlor on Wooster Street in New Haven or on Franklin Avenue in Hartford to let a national chain like Pizza Hut use its brick ovens whenever Pizza Hut wants without paying the costs of using the ovens. What sense does a requirement like that make? Certainly this isn't the way to bring competition into Connecticut."

With that, SNET filed a motion requesting suspension of the ruling's implementation until a federal court reviews the FCC rules. SNET and others believe that the FCC ignored the Telco Act's intentions of fostering voluntary agreements between telco companies and giving authority to the state regulatory commissions to arbitrate stalled agreements. "The FCC went too far by claiming authority Congress had delegated to the states, who have the local expertise and experience to oversee and to shepherd local competition."

Joining SNET in the suit is GTE. According to GTE honcho and legal-eagle William P. Barr, "Congress passed the Act to deregulate the industry, foster competition and spur investment, innovation and job creation.

Bill Gram-Reefer, based in Concord, CA, is president of WORLDVIEW, specializing in connectivity and communications and has been using telephones for 44 years. His Online Services column appears monthly in MicroTimes www.microtimes.com. His web page can be accessed at worldview-bbs.com. E-mail Bill at <mailto:reefer@worldview-bbs.com>

The FCC's order thwarts these objectives." What's more, "Congress explicitly rejected centralized rule making and instead established a framework for deregulation that relied first on marketplace negotiations and then left unresolved issues to be decided by the states. In issuing a 668-page order dictating national prices and regulating virtually every aspect of the local market for telecommunications, the FCC has overriden both the marketplace's and the states' role."

Claiming the FCC's pricing methodology, in effect, "allows a Big Government federal agency to take BellSouth's property without just compensation," Walter Alford, BellSouth's familia consularii, took the marbles out of his mouth and talked tough, too. "BellSouth has concluded that the FCC has gone far beyond the intent of Congress with this massive order, which displaces private negotiations and usurps the states' authority to bring competition to the local marketplace."

In preparation of BellSouth's own filing against the FCC ruling, Alford noted, "The states should be in charge of the framework for establishing local telephone competition by overseeing the negotiations of competitors in their communities. But the FCC has imposed an elaborate set of federal rules on the states without any regard to local needs and conditions. The FCC has vastly exceeded its jurisdiction, as well as the intent of Congress, in implementing Section 251 of the Communications Act of 1996.

"The prices at which BellSouth will be required to lease parts of its network are so low that competitors will be discouraged from building new telephone networks and the jobs Congress expected to be created will be lost. BellSouth does not object to giving discounts. We object to giving excessive discounts, about 40 percent or more — three to four times what Congress intended."

It's a wonder no one's likened the FCC ruling to Hillary's Health Care Reform proposal.

Meanwhile, AT&T counters that "The FCC's rules are precisely what Congress intended under the Telecommunications Act, which calls for a national framework to open local monopoly markets to competition. The FCC is both entitled to and required to set national guidelines." Yet, even as AT&T showed approval of the FCC rules in most areas, its big cahuna, Bob "I'm-worth-every-penny" Allen, cut the cheese by describing the collection of fees as "nothing more than an unjustified 'tribute' to the local com-

panies and is contrary to the Telecom Act's central purpose of requiring cost-based prices." He squeezed off another charge in claiming outrage "that during a transition period, the local companies will continue to collect access fees from new entrants who buy unbundled network elements, even when the local companies no longer provide any service to the new entrants' customers."

MCI, with local service in 12 major markets already, is racing to launch local services in New York and Los Angeles. By the beginning of 1997, MCI hopes to expand to 25 cities in 20 states, covering more than 40-percent of the business customers in the U. S. But this includes sporadic fire fights on a number of fronts. In one instance MCI is crying foul against Ameritech who MCI claims tried to raise long distance charges to customers hoping to lock in higher revenues while saddling MCI with higher costs. In Iowa, MCI asked for arbitration against U. S. West, claiming, "We can't fit the pieces together until consumers control the wire that reaches their home. Consumers have paid for the local network many times over. Now they should be allowed to use the network to hook up to any service provider they choose."

MCI's drive is not a moment too soon as new competitors join the feeding frenzy with new strategies and mergers. Case in point is SBC's claim that it is considering a flat fee for unlimited long distance service. Worse yet, like the giant monsters spawned by atomic radiation in the Sci-Fi movies from the 1950s, another megatelo has recently risen from the churning waters in the merger of MFS and WorldCom Inc. Together these two form the 5th-largest telecommunications Mothra in the U.S. with \$5.4 billion in revenue from about 500,000 customers. Look out Tokyo! MFS/WorldCom will continue to focus on business customers, a building-crushing strategy that distinguishes it from PacBell and other LECs. The new bug on the block can bring some heat in the Internet arena, too, as MFS had earlier purchased UUNet Technologies for about \$2 billion.

Like moths to a light, the recent merger of MFS and WorldCom is just the start as new players flit about the capitalist radiation generated by the fission rods of the historic 1996 Telco Act. We note with interest an announcement from the Atlanta-based Southern Company, the guys who supply the electricity to Atlanta and environs. Guess what? The FCC approved its application to set up two holding companies. Each will spin off two subsidiaries that will launch efforts that will include leasing the company's fiber-optic network and peddling

long-distance services. They got wires. They got right-of-way. Power On.

You can guess the rest, can't you? Let's go in alphabetical order starting with Amtrak. ♦

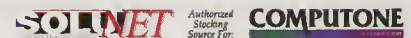
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"FCC Stands For Friendly



**Chairman Reed Hundt,
Federal Communications Commission**

stands what it means to pioneer a cutting edge idea and not make any money doing it.

Although I love all newspapers and especially the *Journal* and *USA Today*, I am a true believer in the Internet. I think it will in the fullness of time change the way we watch TV, alter the significance of radio, revolutionize education, expedite and improve health care, bring down radically the prices of international telephony, and continue to bedevil everyone in the hardware and software business.

My hope is that the power of the Internet will force-drive our two-point FCC agenda — competition in communications and public benefits from communications. That's why we've resisted all efforts to bring Internet communication within the out-of-date regulatory scheme we have inherited at the FCC. This scheme involves dividing communications between intra- and interstate traffic, dividing policy between state and federal jurisdictions, intruding on investment plans and fixing prices by regulation instead of competition.

This scheme is as out of date and simplistic and useless for the modern age as, let's say, Social Darwinism.

So instead of applying its artificial constructs to the Internet, we want the Internet to help us deconstruct and redesign the country's and the world's communications policies and networks. The Internet can change everything, if we let it. Its digital code turns a zero into a window on infinity and a one into a unifier of economies and society. It turns the world upside down.

[Editor's note: the headline above is quoted from a speech delivered by Reed Hundt, Chairman of the Federal Communications Commission, on September 18, 1996, at the Wall Street Journal Business And Technology Conference in Washington, D. C. His candid remarks about the FCC's hopes and plans for the telecommunications industry — particularly the Internet — are reproduced verbatim below.]

Without offending our host *The Wall Street Journal*, I hope, I would like to offer you my list of what's in and what's out, in true *USA Today* style.

In: packet switching; big bandwidth; competition in communications; the FCC's interconnection order; 50th birthdays; designer vacations; social security; Techno-Communitarians; golf; Juwan Howard and the Washington Wizards (nee Bullets); and *The Wall Street Journal* news reporters.

Out: circuit-switched networks designed for 3 minute calls, bandwidth that is narrow, squeezed, tricky, exiguous, skimpy and miserably slow; communications monopolies; and *The Wall Street Journal* editorial page.

Actually that's not fair. The true truth is that I often agree with the economics on the *Journal's* editorial page. It's just that I'm hurt that they haven't run one of those awful cartoons of me lately.

Let's talk about a different paper.

Have you noticed that *USA Today* provides the best coverage of the Internet? Some say that's because *USA Today* under-

Bill Gates is a genius. He truly is the Henry Ford of the information age. But so far he is a Ford who started not by building the Ford, a car for everyone, but the Lincoln, a car for the upper tier.

Now from what I read about the \$200 PC, Ellison and Gates and Grove and all our other leaders of the information economy are plainly going to give us a range of model lines, PC's spread across price points for all consumers like Ford sells Fords, Plymouths, Mustangs, Lincolns, and Jaguars. This breakthrough will mean that everyone will have an affordable car for the information highway, a usable PC for all purposes.

Because of this breakthrough in product development for the key barrier to Internet use, the PC, we are now looking at a future where the penetration rate for Internet access in the U.S. will in the fullness of time be as high as the penetration of VCR's (88%), telephones (95%) and even TVs (103%). That latter number is what they tell me but it's hard to interpret. I think it means some people watch more than one TV at a time. Let's let that go.

"Our ultimate goal is to reach the sunny uplands of deregulated markets in which the prices and output of telecom services, like software and soap, are set by markets and not governments"

to Computer Communications"

Now if PCs are going to be at last truly ubiquitous that will put unimaginable pressure on the networks to accommodate the huge new usage.

This pressure won't develop in a week or a month, but over time I envision a PC-driven, Internet-driven need to build in this country, through and over and with and around the existing network, a big bandwidth, wide access network.

I don't know if that network of tomorrow will be fiber to the bedside table, or the cable modem hung on the cable network, or the new LMDS technology (with a two-way dish no bigger than a small pizza) that delivers the big bandwidth of the 21st century networks. It may be all of the above.

But I know this: Starbucks is successful because its coffee is lawful, socially acceptable and completely addictive.

Bandwidth is just like that. You can never get enough.

The importance of our recent interconnection order at the FCC for the Internet is that it opens the way for the emergence of any number of new firms that will be in the business of specialty bandwidth delivery. The firms I imagine will provide networking solutions to homes, schools, neighborhoods. They will lay wire, put up dishes, provide software, link the half dozen PC-like devices that each home will have. They will be able to use the existing telco network, by the terms of our order, to get in business.

How many radios do you have in your house today? You don't even know, right? That's the way it will be with Internet access devices in the reasonably near future. PC-stuff that will facilitate the access is all it takes. So the mini-PC's of the near future will be in your home's electrical equipment, your kid's book bag, attached to your belt, stuck in your briefcase.

You will have e-mail to your neighbors in your suburb, or to the teachers in your kids' classes. You will be networked with doctors, lawyers, and, in my case, lobbyists, with enough bandwidth to send x-rays, videos, graphics.

You already know all this of course. It was in Bill's book *The Road Ahead*.

There is a downside.

No one decked out in the PCware of the future will ever be able to get through a metal detector in less than half an hour.

When they ask you at the airport if a stranger gave you something, you'll ask, does shareware count? Then they'll send you in the other room for more extensive questioning.

But in the networked world, why travel anyhow?

There are two laws that give us the best foundation for understanding the Internet. I'm talking about Moore's Law and Metcalfe's law. Moore's law tells us that computer processing power doubles every 18 months. Metcalfe's law says that the value of a network increases exponentially with the number of nodes. The people who invented these laws have done well in life, so in a blatant attempt to imitate I have invented a law of my own: Hundt's Law, which I formulated this summer for the Internet Society conference in Montreal:

Access + Bandwidth = Communications Revolution

Here's what I mean by this. Lehman Brothers just released a report stating that "demand elasticity for bandwidth' is a key communications theme, as the unending appetite for bandwidth drives industry growth." The huge pent-up demand for more bandwidth means that as competition pushes prices down and makes more services available, usage will skyrocket. Lehman Brothers is initiating coverage of five different equipment manufacturers because they know that the bandwidth business isn't like the war between Betamax and VHS.

Multiple technologies, like ISDN, ADSL, and ATM in the wireline world, PCS and LMDS in the wireless world, and digital set tops and cable modems in the cable world, can all emerge as winners.

To meet this bandwidth challenge, our government policies must be directed towards competition and deregulation, which will in turn stimulate investment, technological innovation, and expansion of the market. This is old news for computer and Internet companies; government is no more involved in setting the price for Microsoft's latest browser and AOL's online service than it is in setting the price for shoes or soap or salsa.

We've already largely deregulated the long-distance industry. With 500 competing companies, and more importantly, at least four nationwide facilities-based networks, there is enough competition so that we no longer need to regard AT&T as the dominant carrier.

We have also preempted state regulation of retail prices for cellular services, and used spectrum auctions to quickly and efficiently distribute hundreds of new licenses. We have minimized the limitations on the use of these licenses, so that the licensees can use their spectrum to both compete with existing service options and to create entirely new markets. That's what Metricom is doing today with its wireless Internet service Ricochet, and what Teledesic hopes to do in bringing two-way broadband communications to every person on the planet. To unleash the potential for these new services, we should further eliminate restrictions on how licensees use spectrum.

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It took a century for the American telephone industry to go from zero to about \$160 billion in revenues today. The competitive, unregulated personal computer industry, by contrast, went from zero to nearly \$100 billion in revenues in just 20 years. John Doerr of the venture capital firm Kleiner Perkins recently said in an online interview that the Internet market could easily triple that, and reach \$300 billion dollars. I imagine it will be around that time that *Slate* starts making money.

Competition is a major reason why the Internet has been so successful. There are now more than 3,000 Internet service providers in the U.S., and everywhere you look in the Internet world, you see similar evidence of competition.

We aspire to achieve this kind of competition in the local exchange market, and to do so we have to give new entrants a chance. It is natural that the companies with monopoly market power will try to keep that power unless governments, through rules, constrain their potential anti-competitive impulses. So that's why Congress, in the Telecommunications Act of 1996, asked the FCC to write new rules of competition. But let's be clear: our ultimate goal is to reach the sunny uplands of deregulated markets in which the prices and output of telecom services, like software and soap, are set by markets and not governments.

We started down this road with our interconnection order, which was released on August 8. Interconnection is the first volume of a competition trilogy that in the next several months will include access reform and universal service.

The interconnection order sets forth clear national rules for opening up the monopoly local networks to new competitors. Its four dozen pages of rules are, in terms of word count, only 61% as long as the rules of Little League Baseball, although admittedly not as important. And those 48 pages, once put into effect by state commissions that must approve or arbitrate interconnection agreements between incumbents and new entrants, will eventually lead to the elimination of thousands of pages of federal and state rules that control monopolies instead of promote competition.

What we want for our economy is what we want for the world economy. We're not looking for exclusivity on our packet-switched, big bandwidth, future deregulated network.

The message of competition is one that we are stressing to other governments, both directly and in negotiations in the World Trade Organization. But the WTO can only succeed if there is a real commitment to competition abroad. We need more market-opening commitments from more countries. We also need to see that the countries which have made offers are truly committed to competition — and not just going through the motions. Specifically, we'll be looking at progress by Germany, France and Japan on interconnection rules that are truly cost-based. With competition we can easily grow the \$550 billion global communications market to more than a trillion dollars a year, and easily double the \$50 billion market for international long-distance calls. This policy would catalyze the continued explosive growth of the Internet worldwide. According to an OECD report, in competitive markets like the

U.S., the market penetration of Internet hosts is five times greater, and dial-up Internet access is nearly three times cheaper, than in countries with a monopoly phone company.

The second part of our competition trilogy is access reform. Back in the early 1980s, the FCC developed a set of rules to govern the way the incumbent local phone companies could charge for the use of their networks by long-distance companies. These "access charges" were part of

a monopoly system that was designed to keep residential local phone rates low. We did manage to keep residential rates low, which we know because 95% of homes subscribe. Everyone agrees, however, that the access charges are much higher than they should be, and that these extra charges mean higher long-distance rates.

When we set up access charges, we wisely decided that providers of enhanced services, like data networks, should not be subject to these charges. As a result, companies including Internet service providers pay end user business line rates with no usage charges for receiving calls from their subscribers. Of course, back then, there was no mass market and commercial Internet.

Now, with Internet usage skyrocketing, some people are saying that we should subject Internet service providers to the access charges paid by long-distance carriers.

I disagree. You don't pour new wine in old bottles, and if we applied these old access rules to new technologies you'd have every reason to whine. Instead let's just break the old bottle — in fact, the bottleneck of exchange access.

For the same reason, we shouldn't try to subject Internet telephony to all the rules that apply to conventional circuit-switched voice carriers. Imposing traditional divisions, like voice vs. data or interstate vs. intrastate traffic, on Internet-based services is wrongheaded and futile. Internet telephony may well become, in time, a competitive alternative to traditional circuit-switched voice telephony, especially in areas like international calls and calls over private corporate networks. We want to encourage that kind of competition, not limit it. I hope the FCC bars any state from limiting the growth of Internet telephony. We want states to regulate less, not more.

But let's agree that as competition builds the big bandwidth networks of the future, we are going to have to confront more candidly the limitations of today's networks.

Carriers engineered and deployed their switches based on the characteristics of voice traffic. Internet users, however, typically engage in far longer calls than voice users. Several local phone companies and Bellcore found in traffic studies that the average voice call lasted between 2 and 5 minutes, while the average Internet call lasted between 17 and 21 minutes. The average end user circuit in a central office was in use 5 to 7 minutes in the busiest hour, but the average circuit connected to an Internet service provider was in use between 31 and 47 minutes in the busiest hour, and some are in use virtually nonstop.

The existing networks weren't built for this sort of use. And the same switches that are being overwhelmed by Internet

"The importance of our recent interconnection order at the FCC for the Internet is that it opens the way for the emergence of any number of new firms that will be in the business of specialty bandwidth delivery."

usage also provide voice connections to other users. According to Bellcore's models, if only 4% of the lines into a central office are in constant use by Internet service providers, users, including non-Internet users, will face a sixty-fold increase in the number of calls that don't go through.

The phone companies argue that the absence of usage charges means that Internet users do not provide the revenue to cover the additional costs they impose on the network.

How can we make sure that the economics of the telephone network do not constrain the bandwidth demands of the Internet? The challenge now is for the governmentally challenged Internet community to figure out how to talk to the FCC on this subject and what to say. After all, FCC stands for Friendly to Computer Communications. After all I'm the first FCC Chairman ever to be on the Net — so let me know — mail to: rhundt@fcc.gov. What should our policies for bandwidth growth look like?

Of course, the short history of the Internet has been a story of people often saying the technical challenges were insurmountable and the network was about to collapse. And every time, ingenious new solutions have developed. Already, Nortel and other equipment manufacturers have announced products to reduce the demand Internet access places on the public switched network.

The telephone industry and the Internet industry need to work together to identify the solutions to these problems. We've already seen some evidence of that kind of cooperation. Our competition policy will drive this process.

Now I'd like to move on to the second element of Hundt's Law, which is that everyone needs access to the Internet, either at home, at school, or in a library. Metcalfe's Law only applies when people can access the network, and if they know how to take advantage of the network access that is available to them. So even if we are successful in meeting the bandwidth challenge, we still must ensure that there is access.

Communications Daily reported last week that advertising on the Internet will explode 50-fold from \$100 million to \$5 billion over the next several years. Many of you are here today because you embrace, fear, need to harness, or are amazed by that prediction.

I don't know if it's true, but, just as Pascal said he chose to believe in God because it was safer than the opposite bet, I think we should assume this prediction might well be right.

That sort of advertising will come about primarily if the Internet reaches everyone. As broadcast TV has discovered, if you can deliver the whole country as an audience, advertisers will make you very, very comfortable. It's good for the Internet if everyone has access.

So again, what are the policies that are likely to build big bandwidth networks accessible to all Americans? I am inclined to believe that the top three answers are competition policy from Congress, pro-competitive rules from the FCC, and

enforcement of those rules at the federal and state level. But it still will be true that competition won't build networks everywhere. You can't just assume all Americans have money to buy the bandwidth that the Internet requires.

In particular there are 50 million Americans whose only money is lunch money. I am talking, of course, about kids in classrooms.

All these kids every day need to have Internet access in every classroom, if we want them to participate fully in the 21st century classroom.

American business repeatedly has heard appeals from public officials to invest in education. Many businesses have responded in big and dramatic ways. The appeal generally is premised on the notion that it is the right thing to do — it is good for the country.

Of course that is true. But it also is in the self-interest of American business leaders to commit to bringing technology to our schools and libraries. Today, only 9% of classrooms are connected to the Internet. Expanding connectivity to schools and libraries will create more technologically literate users to purchase the new Internet services businesses are offering, and will create more skilled workers to fill the thousands of new jobs the industry is creating. Growth in the Internet market depends upon an increase in the number of consumers who are technologically literate, and connected to the network.

The investment to network our schools and libraries is so small and the payoff so large. Look at the math. The information industry alone generates \$700 billion a year in revenues. It will cost at the most \$10 billion over five years to network every classroom. This is 10 billion out of about 5 trillion dollars of revenue the information sector of our economy is projected to generate over five years, which is 0.2 percent.

Can it be that we have a 700-billion-dollar-a-year information technology industry and yet we can't afford to give every teacher the tools we give every shipping clerk at Wal Mart? Or that we could afford to network every classroom by the beginning of the next century, but somehow we just neglected to do it?

At the FCC we will vote next year on a new universal service funding mechanism. Should we vote to network all the classrooms in the country? Would you support that? Would you persuade others to support that?

If we can't get this done, what can we expect to do together?

One of the great aspects of modern times is that our challenges are new and different every day. The challenge I'm talking about is to provide bandwidth and access to all Americans, but especially to kids in classrooms. Right now we don't see this done in any but the most exclusive, private schools and a handful of model projects. The way you care for the next generation is the proof of a person's character and a country's values. Let's prove we are as good a country as we'd like to be by delivering the future — the Internet future — to our kids. ♦

*"I'm the first FCC
Chairman ever to be on the
Net— so let me know —
<mailto:rhundt@fcc.gov>.
What should our policies
for bandwidth growth look
like?"*

PUTTING THE NET TO WORK

by Durant
Imboden

PREGNANCY, CHILDBIRTH, AND ADOPTION

The harvest season is over, and Thanksgiving is nearly upon us (unless we're Canadians, in which case it's already past). With long winter nights approaching, it's time to plant the seeds for next year's bounty — including our own offspring, if we don't already have a full complement of little feet running around the house.

As *Boardwatch's* self-appointed Medical and Family Services Editor, I've put together a collection of Web sites and newsgroups to help prospective moms and dads get ready for the next generation without having to leave their computers.

GETTING STARTED

Do you really want a child? Are you ready for the sacrifices you'll need to make as a parent? If you aren't sure, take "The Parent Test" from the General Pregnancy I FAQ at the *FamilyWeb* Home Page, <http://www.familyweb.com>. Here's an abridged paragraph from the test, which was written by Paul Adams (<mailto:paul.adams@3do.com>):

"Hollow out a melon. Make a small hole in the side. Suspend it from the ceiling and swing it from side to side. Now get a bowl of soggy Froot Loops and attempt to spoon it into the swinging melon by pretending to be an airplane ... You are now ready to feed a 12-month-old baby."

Sexuality Bytes Gets Down to the Nitty-Gritty

If you decide you're ready for parenthood, you'll need to rise to another challenge: conception. You can learn what's involved and how to proceed at *Sexuality Bytes*, <http://www.sexualitybytes.com.au>. This "online

encyclopedia and sexual health" is sponsored by The Microsoft Network in Australia. It's a bit of an eye-opener by U. S. MSN standards, since it includes photographs of copulating couples along with a guide to conception, pregnancy and childbirth. There's even a forms-based contact page where you can dispatch your questions about sex to an anonymous panel of experts. (My only criticism is the author's repeated use of "prostrate" for "prostate" —

a common mistake, since many men are left prostrate by a prostate massage.)

If conception doesn't occur within a year or so, you may want to read the *Sexuality Bytes* pages on infertility. Another site worth visiting, especially for U.S. residents, is *Fertilitext* at <http://www.fertilitext.org>. Fertilitext's bare-bones HTML pages include a directory of fertility specialists in the United States, a list of accredited sperm banks, an e-form for directing questions to a Fertilitext nurse or physician, and links to other fertility resources on the Web.

One such resource is the *Atlanta Reproductive Health Centre*, <http://www.ivf.com>. This site is loaded with general fertility and pregnancy information, but its highlight is an online book titled *Miracle Babies and Other Happy Endings* by Mark Perloe, M.D. and Linda Gail Christie. The book is a detailed, highly readable guide to fertility problems and treatments for both sexes, with advice on selecting a fertility physician or clinic.

Finally, the `misc.health.infertility` and `alt.infertility` newsgroups provide support and up-to-date medical news to couples who need help with conception.

GESTATION AND CHILDBIRTH

When you think you're pregnant, it's time to be tested — either at a clinic or with a do-it-yourself kit. *Home Testing for Pregnancy* at <http://kerouac.pharm.uky.edu/HomeTest/Pregnant/ptoc.html> is worth reading before you head for Drugs R Us. This informative site was created by students at the University of Kentucky's College of Pharmacy.

If the test proves positive, open your browser to <http://205.158.5.39/healthinfo/prenatal> and explore *Kaiser Permanente's Health Reference: Pregnancy & Prenatal Care*. The HMO's medical writers provide questions and answers for expectant mothers at different points along the gestational timeline, from 8 weeks to postpartum. The articles are short, factual, and rather impersonal — much like pocket-sized handouts in a doctor's office.

Sabrina Cuddy's Pregnancy Page takes a friendlier approach. The site, at <http://www.fensende.com/users/swynymph>, is a childbirth educator's collection of links to pregnancy and parenting resources. Ms. Cuddy is an instructor in the *Bradley Method of Natural Childbirth*, <http://www.bradleybirth.com>, which has more than 1,000 instructors in the United States and abroad.

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You'll find some 50 birth-related links at <http://www.NewBaby.com>, which bills itself as "the Internet nursery." The links range from nonprofit organizations (Britain's National Childbirth Trust, the American College of Nurse-Midwives) to corporations (Gerber baby food, EcoBaby Catalog).

My own children were born with the help of nurse-midwives, so I encourage you to visit **Midwifery Today's Online Birth Center** at <http://www.efn.org/~djz/birth/birthindex.html> before making your obstetrical arrangements. Besides the usual articles and links, the Online Birth Center has a searchable index of e-mail addresses for midwives, childbirth educators, breastfeeding consultants, and other practitioners.

Childbirth.Org is yet another essential stop on your Web tour. Robin Elise Weiss has done a yeowoman's job of compiling items that range from a due-date calculator to pregnancy-related FAQs. The topics at <http://www.childbirth.org> include birth stories, episiotomies, fetal monitoring, complications, and doulas (women who are trained to help expectant mothers and their families through labor and birth).

Gender is often an important question for expectant parents, who need to know whether the nursery should be decorated with Shaq posters or Barbi wallpaper. Carol Stevens has a convenient solution on her **Pregnancy Information** page at <http://www.holodeck.com/pregnancy/pregnancy.html>. By using a Chinese Lunar Calendar "taken from a royal tomb near Peking, China," you can predict your child's sex with "99% accuracy."

Alternatively, you can peek at your unborn child's genitals with obstetric ultrasound scanning — a technology that Dr. Joseph Woo exploits admirably on his **Ultrasound Scans** pages, which are located at <http://home.hkstar.com/~joe woo/joewoo2.html>. Dr. Woo's text describes everything you ever wanted to know about OB ultrasound but were afraid to ask. A photo gallery lets you examine ultrasonic fetal portraits while soothing music plays in the background.

If your doctor or midwife prescribes other tests, you'll want to check Dr. Gregory R. DeVore's **Prenatal Diagnosis Home Page** at <http://www.fetal.com>. The site briefly describes ultrasound, triple marker screening, and fetal echocardiography. It also features a remarkable bonus: an AVI video clip of a fetal heart that shows blood pumping through the heart's chambers. (The heart has a ventricular septic defect, or VSD, a not uncommon defect that often heals during early childhood.)

Diabetics have special concerns during pregnancy — both for themselves and their babies — and the American Diabetes Association's Sex, Pregnancy and Parenting page has useful information on a variety of topics, including gestational diabetes.

CESARIAN BIRTHS

An estimated 25% of U.S. births are performed by C-section these days, compared to a mere 9% in Britain. The **U.S. National Library of Medicine** discusses the topic in **Cesarian Section: A Brief History** at http://www.nlm.nih.gov/exhibition/cesarean/cesarean_1.html.

Robin Elise Weiss, proprietor of Childbirth.org, has a **Cesarian Section Homepage** at <http://www.childbirth.org/section/section.html> that addresses such topics as how to avoid an unnecessary C-section, a C-section FAQ, and vaginal birth after a previous C-section.

If a scalpel-assisted birth appears to be unavoidable, Sabrina Cuddy's **Cesarian Section Photo Gallery** belongs on your "must see" list. The photos and text, at <http://www.fensende.com/users/swynymph/csect/gallery.html>, show the events leading up to the birth of the author's son. Small thumbnail photos are linked to enlargements, and baby Phelan appears none the worse for wear after being surgically removed from Mom.

CIRCUMCISION

Unless your religion dictates it, deciding whether to have your male baby snipped without his permission may not be easy.

The **Circumcision Information and Resources Pages** offer a "thanks, but no thanks" view of the issue at <http://www.cirp.org/cirp>. For those dads who were circumcised as infants, the **Anatomy of the Penis and the Mechanics of Intercourse: an Illustrated Guide** is likely to inspire rueful thoughts and the conviction that nature is best left alone.

Medical Benefits of Circumcision is at the other end of the penile political spectrum, offering a cut-at-all-costs viewpoint at <http://alfa.physiol.su.oz.au/brianm/circ.html>.

BREASTFEEDING

It was only a generation ago that breastfeeding was out of fashion in middle-class American society. The pendulum has long since swung back, thanks to the missionary work of **La Leche League International** at <http://www.prairienet.org/llli>. The organization's classic book, *The Womanly Art of Breastfeeding*, helped spawn a worldwide movement that now seems almost quaint — at least to parents who recognize the convenience and nutritional advantages of mother's milk.

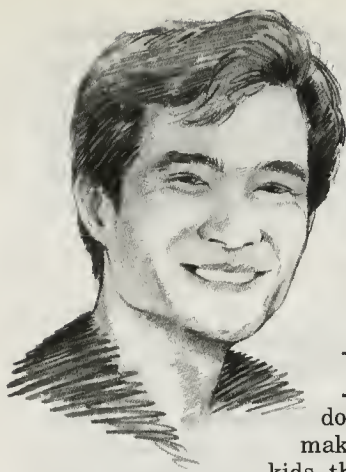
Still, if you need help or encouragement, La Leche League is but one source of information on the Internet. Another is **ArtMama's Breastfeeding File Cabinet**, <http://www.wineternet.com/~artmama/library.htm>, which has a generous selection of links to lactation sites. **The Breastfeeding Page** is an even more comprehensive resource at <http://www2.islandnet.com/~bedford/brstfeed.html>. You'll also find nursing newsgroups at [misc.kids.breastfeeding](mailto:misc.kids.breastfeeding@alt.support.breastfeeding) and alt.support.breastfeeding as well as an "extended nursing mailing list" that you can subscribe to at <mailto:parent-1-request@uts.edu.au>.

ADOPTION

If conception fails, miscarriage occurs, or you simply prefer the idea of adoption, you should begin your parenting search at **Adopt: Information, Assistance, Support**, <http://www.adopting.org>. This site has dozens of links to FAQs, articles, organizations, attorneys, agencies, and other resources. It includes support forums where pre-adoptive families can post questions and read letters.

The Adoption Page features several nonprofit organizations at <http://cs1.cityscope.net/~crphenix/adopt.html>. One of the linked URLs, the National Adoption Center's **Faces of Adoption: America's Waiting Children** project, is designed to help prospective parents search for children by various criteria (age, sex, disability, etc.) before contacting an adoption specialist for more information.

A million questions arise from the simple act of having a child. The Internet can help you connect with others who have found some answers. ♦



BIG BOARD BRIEFS by Wallace Wang

NBA SUES AMERICA ONLINE

Wallace Wang is the author of *CompuServe For Dummies*, *Procomm Plus for Dummies* and *Visual Basic for Dummies* (all published by IDG Books) as well as *Surfing The Microsoft Network*, published by Prentice-Hall). He also does stand-up comedy in the San Diego area, and has appeared on A&E's "Evening at the Improv" TV comedy club. He can be reached via e-mail at: 70334.3672@compuserve.com or bothekeat@aol.com or bo_the_cat@msn.com

In an effort to increase revenue so they can pay basketball players multimillion dollar salaries to drop out of college (and then make public service announcements telling kids the importance of staying in school), the National Basketball Association (NBA) has filed a lawsuit against America Online. In their lawsuit, the NBA claims that America Online is misusing NBA property by posting real-time NBA game information without their permission.

Normally suing America Online would bring cheers of support, but America Online has countersued, charging that the NBA cannot prohibit them from posting factual information about NBA games, even while the games are in progress.

However, the NBA may have the law on its side, since it recently won a lawsuit against Motorola, claiming that Motorola's SportsTrax handheld device for transmitting sports statistics amounted to a "competing commercial misappropriation" of game scores. The courts granted a permanent injunction against Motorola and Stats Inc., a company that helped develop the SportsTrax device, to prevent it from being sold. Stats and Motorola plan to appeal the ruling.

MICROSOFT POSTS RECORD PROFITS (EXCEPT FOR THE MICROSOFT NETWORK)

Microsoft finished its fourth quarter with a 52 percent increase in net income. Profits soared to \$559 million or 87 cents a share, with profit margins increasing to 89 percent from last year's 86 percent.

During the quarter, sales from desktop applications (such as Microsoft Publisher and Microsoft Office) exceeded \$1 billion for the second straight quarter. The lone Microsoft division that's continuing to bleed red ink for the company is the Microsoft Network (MSN) online service. In the previous fiscal year, Microsoft invested approximately \$100 million to shore up the Microsoft Network. For this fiscal year, Microsoft plans to spend much less in the wake of declining interest in online services.

Visit the Microsoft Network forums and you'll find that most are still empty with month-old messages and few new files being added on a regular basis. To reverse this ghost town appearance, Microsoft plans to completely revise MSN's look by converting it to HTML standards. Let's hope Microsoft can make the change from a proprietary online service to a web site before the online market totally falls apart.

H&R BLOCK KEEPS COMPUSERVE

Although H&R Block sold 20 percent of their CompuServe stock, they've decided to hold on to the remaining 80 percent for now. While H&R Block plans to sell off their remaining CompuServe stock eventually, they've decided to maintain their shares since the price of CompuServe stock has plummeted from the initial \$30 a share to its current \$13 a share value.

So why is H&R Block holding on to CompuServe's stock? Most likely they're waiting for CompuServe shares to rise in price (good luck) so they can dump the stock before its eventual downfall. CompuServe recently lost \$17.1 million in the first quarter and an expected \$9 million to \$13.5 million for the second quarter. In announcing its first-quarter losses, CompuServe also stated it would lay off 150 employees, 4 percent of its work force and sell its Spry Inc. division, which provides flat-fee Internet accounts through SpryNet.

Given CompuServe's bungling of its WOW! online service, the defection of Microsoft's official support for their technical forums, and the growing recognition that flat-fee Internet accounts provide much greater value and usefulness than expensive per hour charges through CompuServe, the online service market may be in a permanent plunge with CompuServe leading the kamikaze dive towards Chapter 11 and eventual bankruptcy.

GENIE SOLD (AGAIN)

Once owned by General Electric, GENIE has been sold once again. After challenging CompuServe in the early days of the online service market, GENIE's subscriber base has dwindled to less than 20,000 members with only 20 employees to maintain GENIE. After General Electric sold GENIE to Yovelle Renaissance Corporation, Yovelle quickly sold GENIE to the IDT Corporations, a long-distance and Internet services company.

Can IDT Corporation turn GENIE around and make it profitable in a world dominated by Internet access? Wish them well. Unless IDT manages to merge GENIE's feeble content to the Internet, it's likely that the value of GENIE could drop so fast that it might be cheaper for a sysop to buy GENIE rather than set up a fee-based BBS.

SPAMMING AMERICA ONLINE

In response to subscriber complaints about receiving unsolicited e-mail, America Online took action on September 4 to bar e-mail received from five

Internet sites (cyberpromo.com, honeys.com, answerme.com, netfree.com and servint.com). One site creates bulk e-mail lists, a second site involves video pornography, and the remaining three sites are associated with a marketing company in Philadelphia called Cyber Promotions Inc. Cyber Promotions reportedly sent as many as 1.8 million unsolicited commercial messages each day to more than a million America Online subscribers.



But Cyber Promotions sued America Online, claiming the online service was trying to drive it out of business. In response to this allegation, U.S. District Judge Charles R. Weiner ordered America Online to lift the ban on Cyber Promotions' mailings.

Steve Case, Chairman and CEO of America Online, said, "As the leader in this new medium, we believe the time has come to take proactive measures against these sites to protect the interests of our members by limiting this annoying and inappropriate use of the medium."

In the wake of its legal setback, America Online plans to release a new feature that allows members to refuse mass mailings. Currently, members can forward junk e-mail to a representative of AOL's Terms of Service department or simply hit the "ignore" button at the bottom of the list of new mail.

NIFTYSERVE COMES TO AMERICA

For years, CompuServe ran a separate online service in Japan called NiftyServe. Like CompuServe, NiftyServe provides forums, e-mail, and file downloading. In the wake of declining American membership, CompuServe has decided to allow Japanese business people, students and anyone else living in the U.S. access to NiftyServe.

CompuServe will market and support NiftyServe memberships in the U.S. with representatives who can speak both English and Japanese.

"This connection will be a very valuable tool for Japanese expatriates and others with an interest in Japan," says Bill Truesdell, CompuServe's director of international operations. "NiftyServe offers a Kanji-character-based electronic mail system, connection to the Internet and 24-hour access to Japanese news wires and financial information."

Unlike CompuServe, members can access NiftyServe using a general purpose telecommunications program such as Procomm Plus or QModem. NiftyServe costs an additional \$12 an hour. For more information on NiftyServe, use the GO NIF-5 command.

COMPUSERVE GAINS OEM CHANNELS

CompuServe has introduced a new custom Internet gateway program for OEMs dubbed the "Private Label Community" program. CompuServe has already made a deal with NEC to provide a desktop icon, called WebWay, that delivers online access to NEC users via CompuServe's SpryNet consumer service. The icon appears on NEC Computer Systems' Ready multimedia PCs and PowerPlayer game systems.

Under the "Private Label Community" plan, OEMs can offer their customers one free month of Internet access followed by pricing options ranging from \$4.95 for 3 hours per month to \$19.95 for unlimited monthly access, CompuServe officials said. In this way, CompuServe hopes to expand SpryNet's subscriber base while giving OEMs a chance to provide additional features they can use to clutter their computer advertisements that nobody understands anyway.

The core SpryNet site can be tailored by OEMs to reflect individual brands, according to CompuServe spokeswoman Tamese Robinson. Several other OEM deals are now in the works and will be announced over the next few weeks, Robinson said.

BANKS ON AMERICA ONLINE

America Online has launched its Banking Center on the AOL Personal Finance Channel (Keyword: Bank), with 18 financial institutions, including American Express, Bank of America and Wells Fargo providing online banking transactions and other services.

America Online members can now pay bills, review account balances, transfer funds and apply for loans through the Banking Center. Fees will vary depending on the user's choice of bank or financial institution, but the Banking Center service itself is free (as long as you don't count America Online's connect-time charges). ♦



THE
POCKET GUIDE
TO THE
INTERNET
THE NO-SWEAT
GUIDE TO THE
INFORMATION
SUPERHIGHWAY
GARY GACH

Includes one
month of free,
unlimited
Internet connect
time from
PIPELINE

BOOK BYTES

by L. Detweiler

The Pocket Guide to the Internet: the No-Sweat Guide to the Information Superhighway

By Gary Gach
1996, Pocket Books (Simon & Schuster Inc.)
347 pages, \$5.99
ISBN #0-671-56850-7
(212) 698-7086

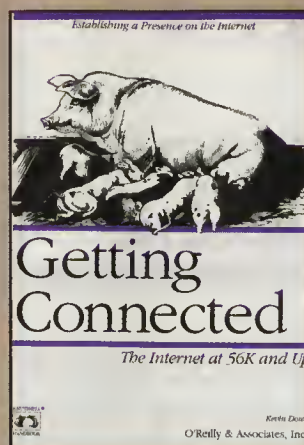
The author taught introductory Internet classes for several years and honed his presentation through trial and error. His philosophy appears to be "there's no such thing as a stupid question;" he writes about how he was continually revising the classes to reframe material that was confusing based on their questions or (perhaps in some cases merely the puzzled expressions of student's faces). This is exactly the kind of background, intuition, and familiarity with the material that highly qualifies Mr. Gach for this area. He sensitively anticipates the tender psychology of his readers and caters to it, something that can be said for few authors in technical areas.

The book is split into two sections, the "Tour" and the "Almanac." It has many interspersed diagrams and excerpts, making it much more lively than pages of prose. The Tour is an overview of the history and background of the Internet and covers the basic concepts about its infrastructure, such as e-mail, mailing lists, newsgroups, FTP, telnet, World Wide Web, etc. The Almanac is a collection of pointers to resources in education, business, publishing, science, computers, entertainment, arts, government, and society. The book comes with a 3.5" disk to set up an Internet connection with Pipeline.

Gach is a salesman who really believes in his product. He sent us a charming photocopied letter promoting his book complete with typos, run-on sentences, scribbled corrections, yellow-highlighted phrases, quirky reader testimonials, and a colorful purple signature, in all of which his folksy enthusiasm (and reliance on a superb editor) really shows through. "I bought your pocket book which is marvelous for a technology leper like me. The book has expressed a hitherto scary subject with all its gobbledygook lingo in the Queen's English." "I just finished your book, and, obviously being computer illiterate as I sit typing this letter on a 1954 Remington manual ... I found the book to be very enlightening. Another book seemed intimidating, especially it's price .. over \$25.00 paperback."

This little paperback guide would be highly appropriate for an introductory class on the Internet, for younger adults not yet awash in cyberspace, or something you might send as a present to your distant relatives who still aren't connected to the Net and are bit intimidated by the whole

thing. People who know what "ftp" stands for should avoid it, but they're probably skipping this particular review anyway. With this book, cyberspace has truly reached the milestone of availability to the unwashed masses. Public Busing on the information superhighway?



**Getting Connected:
the Internet at 56K and Up**
By Kevin Dowd
1996, O'Reilly
and Associates Inc.
410 pages, \$29.95
ISBN #1-56592-154-2
<http://www.ora.com>
(800)889-8969

The author has written another O'Reilly book, **High Performance Supercomputing**, which has a somewhat limited audience even in the niche technical areas, whereas this one will

have much wider appeal but will likely be subject to revisions due to the fast-moving nature of the material he covers. Apparently much of his experience for this book comes from constructing firewalls, a very challenging task that requires detailed knowledge in key Internet areas, both hardware and software.

This book covers all the intimidating arcana of getting connected to the Internet at higher connection rates in the least overwhelming way possible. Early chapters are less technical than latter chapters. The coverage is very thorough, virtually encyclopedic, and this is yet another O'Reilly reference that will likely become the definitive guide in its area from the moment it is released.

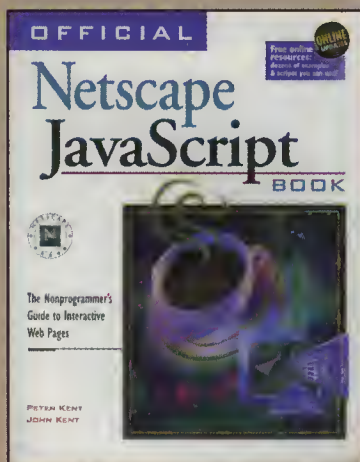
Chapters cover: service options, choosing a provider, bandwidth, the circuit (LECs and IXC's, data communications equipment), router configuration, networking layers and IP, PPP and SLIP, frame relay, X.25 and LAPB, ATM, SMDS, HDLC, static vs. dynamic vs. exterior routing, physical networks, connection turn-up and debug, Internet security (different grade firewalls from "minimalist" to "heavy-duty"), Domain Name Service, Internet mail (SMTP/POP), IP on the desktop (PC's, Macintosh, dynamic addresses). Appendixes cover access lists, bandwidth requirements, world wide web servers, anonymous FTP, mail transponders, Usenet news, and Internet service providers.

Dowd has constructed several excellent fill-out forms that people can use to determine their bandwidth requirements prior to connecting to the Internet. Overall the book is, as much as such a thing is possible, a handholding tour through

every complex stage of establishing the Internet connection, from hardware installation to software configuration.

We don't know if it was the author's or the illustrator's idea to have so many diagrams, but we find it highly laudable! The illustrations are copious, well-placed, and of outstanding quality. In stark contrast to many other computer books, seemingly every illustration conveys a message, and exactly the message it was intended to. Here obviously great care was put into "getting it right" and the diagrams chop up the daunting complexity of the subject into bite-size pieces which combine to tremendously reinforce the informational value and delivery of the book as a cohesive and unified whole.

Our only nitpicks: The emphasis of the book is more on "getting it working," slightly at the expense of "tweaking it to perfection." We'd like to see more coverage of using traceroute and other tools to identify and tweak a sluggish Internet connection. More information on the interrelation of web traffic and connection configuration would be useful to many readers (such as optimizing). Also, we know there are all kinds of "connection horror stories" associated with subtle gotchas such as mail messages that bounce forever, etc. — a chapter devoted to these pitfalls would be priceless. But assuredly these are all on the order of not getting a parsley-finish-touch with a fine and delicious steak dinner. There's an awful lot of meat here for even the most demanding appetites!



Official Netscape JavaScript Book

By Peter Kent and
John Kent

1996, Ventana
Communications
Group, Inc.
480 pages, **\$29.99**
ISBN #1-56604-465-0
[http://www.netscape
press.com](http://www.netscape
press.com)
(919)361-0424

In a book about a computer language, there are two primary issues: how well the language is

described, and how good the language itself is. We feel compelled to make a few comments in the latter category about JavaScript. As the book reveals in the history of JavaScript, it was originally created by Netscape engineers who were persuaded to make it part of the official Sun Java standard. In our opinion JavaScript does not have the meticulously well-thought-out cohesion and elegance that Java contains, and in fact there is some reason to think this may remain the case or become even worse. JavaScript is still evolving and is already showing signs of the deadly programmer virus, "creeping featuritis," in which a language exhibits confusion of identity. The JavaScripts in this book tend to have a rather raw hacker flavor.

For example, on page 387 the book talks about how a keynote sample application of the book, "area code application," requires a little routine to output a different carriage-return-

value based on whether the Navigator is running on the Mac or a PC, complete with an ugly "if" statement to test the platform via an obscure browser variable and output different results accordingly. This could be branded as an abomination of the paramount platform-independent goal of Java because it is exactly the kind of platform-dependent C-code-ifdef-like-hack Java design purports to transcend.

At the very minimum this is a strong indication of the lack of evolution in JavaScript standards at this time (that is, even if this is a "bug" that is removed in a new version, it's a very glaring one to have in any version at all). In fact it seems "JavaScript standards" might be a bit of a misnomer or even an oxymoron at this point based on all the caveats presented in the book.

To address the major point of this review, i.e., how good the book is, we find it to be a good exposition of a marginal language. The niche that JavaScript does seem to fill is in web form situations where contents of different controls are interrelated and dynamically dependent on each other, such that changing one ideally would simultaneously change another, prior to submission of the form. It also has the ability to manipulate simple browser object properties such as color and visual format. The book has good examples of all of these. But there seems to be little coupling with the Java language in JavaScript, nor any indication of any intention to add this (although with "creeping featuritis," anything is possible). The underlying premise driving JavaScript seems often times murky. One claim is that it is designed to give some of the power of Java to nonprogrammers without the complexity of an object-oriented language. But this is highly questionable given JavaScript's complexity (it supports all basic programming features such as objects, functions, loops, conditionals, etc.).

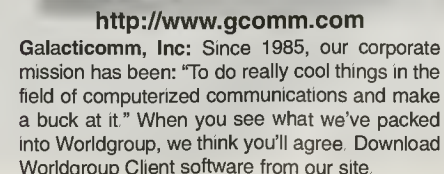
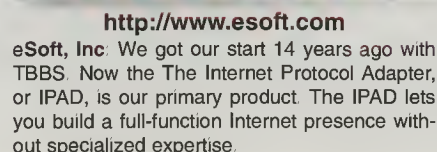
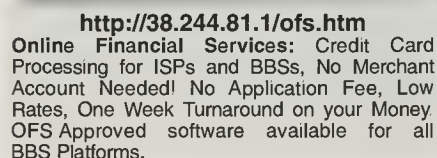
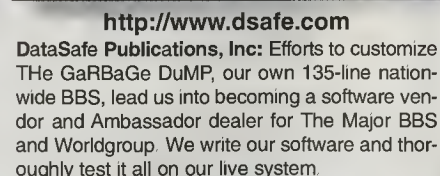
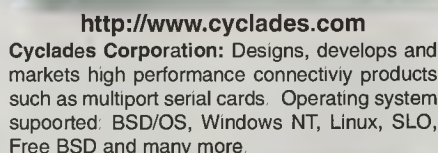
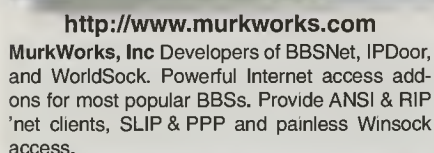
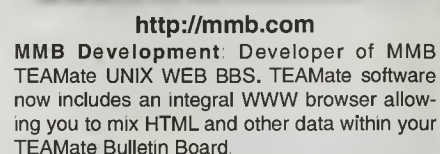
Chapters: What is Javascript; A Few Quick JavaScript Tricks; Scripts, Functions; Variables and Literals-Storing Data; Expressions and Operators-Manipulating Values, Conditionals and Loops-making Decisions and Controlling Scripts, More on Functions; Troubleshooting; Building Arrays; Objects, Properties, and Methods; Built-In Objects, JavaScript Events, Advanced Topics; Controlling Windows and Document; Javascript with Frames; Forms and Javascript, Communicating with the User, the Area Code Application.

Regarding the language design, trying to read the murky signs, it seems that what the Netscape engineers may have really wanted was to identify a simple subset of Java that doesn't have all the bells and whistles and didn't require an enormous and complicated interpreter to support, but could handle simple kinds of web page and browser interface capabilities. Call it "Javalight." If this is true, then in the future we would expect to see JavaScript as a separate language disappear and a new specification of it as a subset of Java features (like Applets) emerge. In any case, we issue strong "caveats" in anyone investing much development time into any JavaScript code because of its obvious instability and design problems. Fortunately, any sophisticated development is impossible anyway given the language limitations. We think that from the future retrospect JavaScript may look like evidence that Netscape programmers should pause to think occasionally between their legendary marathon sessions of incessant keyboard-pounding. ♦

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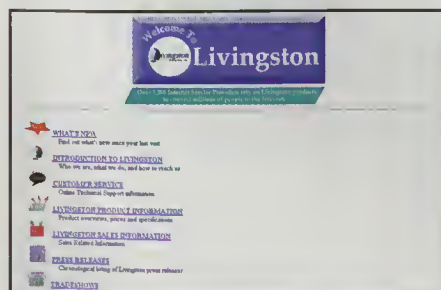
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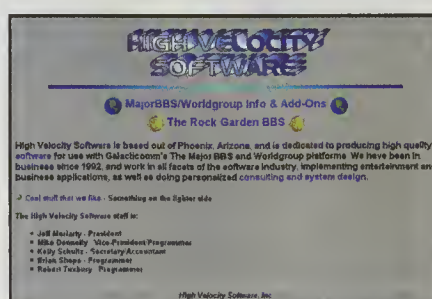
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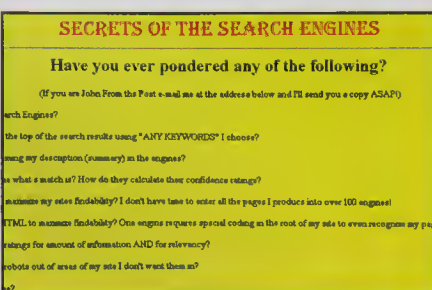
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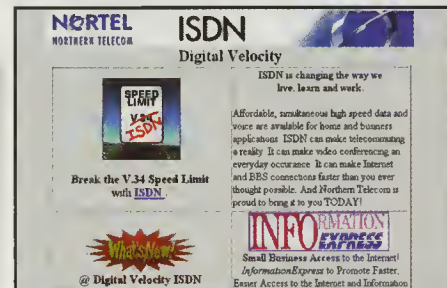
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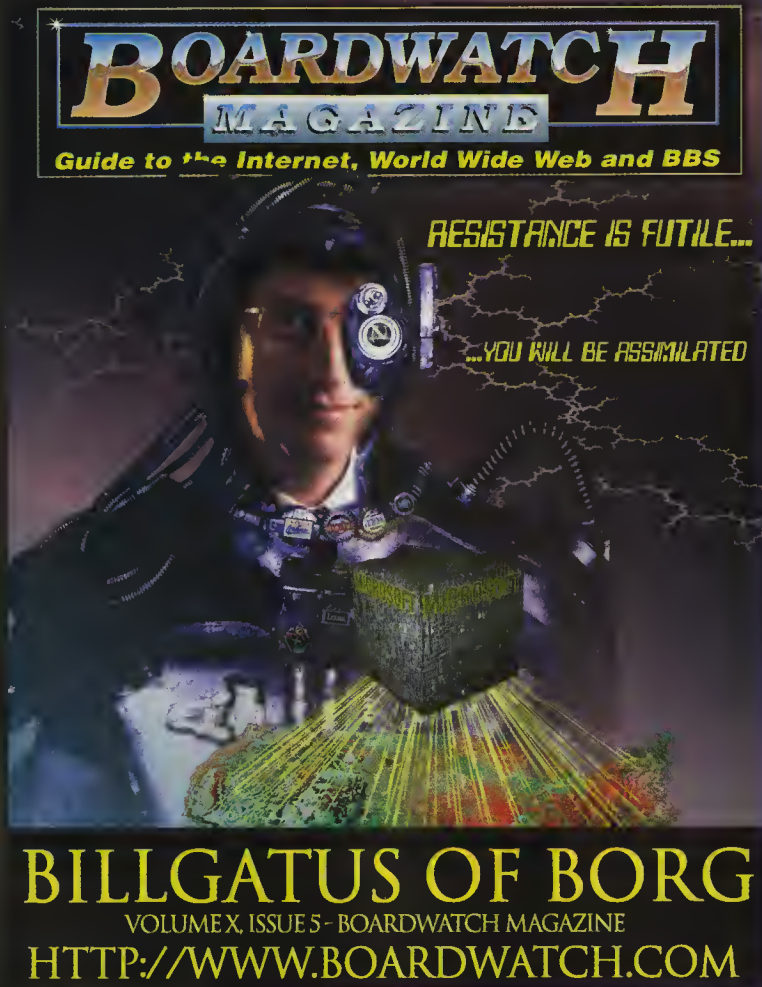
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DVORAK ONLINE by John C. Dvorak

THE PLOT THICKENS

In addition to his weekly syndicated radio call-in show, "Software/Hardtalk," syndicated newspaper columns, magazine writing for *MacUser*, *PC Computing*, *DEC Professional*, *Information Technology*, and his featured "Inside Track" column in *PC Magazine*, Dvorak is the author of several best-selling books, including *Dvorak's Inside Track to DOS & PC Performance*, *Dvorak's Guide to PC Telecommunications*, and *Dvorak's Inside Track to the Mac*. John can be reached at <mailto:dvorak@aol.com>

As we await the MMX Pentium chips from Intel we are starting to see some of its uses emerge. A primary use will be that of a modem; the modem makers are all aware of this situation, frightened by it and at the same time drooling in anticipation. The fear is that the modem business will dissolve completely over time, since a Pentium MMX has more than enough DSP power to easily emulate a modem and still function as a CPU. The drooling is because if the modem companies can sell a so-called soft modem then the margins will probably be a lot better than they are for modems themselves. A soft modem is just code on a disk.

At the end of September, Motorola jumped into the fray before the rest by announcing its plans for a variety of soft modem products including software-driven ISDN, XDSL and cable modems, which on the surface seem like rather ambitious plans. If a Pentium can handle cable modem chores and still function as a CPU, then doing 28.8 kbps V.34 modem emulation should be effortless for the chip.

Many companies plan to produce elaborate value-added systems such as complete phone centers with answering machine and voice mail capability as well as FAX and whatever else you can think of. By the year 2000 I suspect that most modem makers will be software companies and the ones with the strongest software portfolios will be the winners. Of course some hardware will still be necessary, but it will not be much more than a card with an RJ-11 jack and traces to the bus.

If you think about the ramifications of soft modems you immediately think of the loss of the external modem. I've never liked internal modems because they have a tendency to hang under certain circumstances requiring a complete system reboot. If someone would simply put a reset button on one of these devices I'd be happy to reach around to push the button. But I've never seen such a button. The better external modems also display valuable information such as the type of connection and the type of error correction being employed. While I've seen some software that emulates these LCD functions on the computer screen the software version never seems to work properly. At best I get some almost useless blinking lights.

Anyway, you can be sure that the first iteration of internal soft modems is going to be a huge hassle as the machine will require constant rebooting (as if it doesn't already).

You can also expect untold compatibility problems with various implementations of soft modems trying to talk to older real modems and with other soft modems. All of us over the years have played with enough modems to know how one modem or other can't connect to one specific modem someplace for no known reason. As the chipsets have been standardized and mostly controlled by Rockwell this problem has lessened. I'm prepared to bet it will return in spades. To exacerbate this problem I'm certain that el cheapo soft modem software bordering on shareware from Taiwan or New Guinea will end up bundled on many machines in much the same way that Bitcom was showing up all over the place a few years ago. Machine makers are always looking for something cheap to bundle on their computers and it will be a struggle for a Hayes or Motorola to convince them that it's their soft modem that should be on the computer not the soft modem from Owl Software in Huang, China.

What are we out here supposed to do in the next few years about this? I suspect that continued use of hardware modems will be a good idea. Hopefully we all have V.34 or V.34bis modems now. They only cost \$150 at the most. Then we're going to have to get a collection of various soft modem software systems for the sole purpose of communicating with a soft modem that simply won't connect to us. You know the way it works with direct connections. "OK, this isn't working. Exactly what soft modem software are you using? I'll have to run it too!"

Gee, just like the late 1970's all over again. Only faster.

BACK TO THE FUTURE, FAST FORWARD TO THE PAST

Historically there were between 200,000 and 600,000 online users who migrated from CompuServe to AOL to Prodigy and back and forth. Then the Information Superhighway comment combined with the emergence of the Web raised people's consciousness resulting in hypergrowth for all the online services, especially AOL.

Old-timers who follow the scene closely have always believed that at some point the online services will go the way of the BBS. Either merge into the Web or die. The exception to this belief is held by a sub-cult of bean-counters who claim that the infrastructure of the online services (mainly all their nodes) and the ability to collect money the way they do gives the online services an edge up on the typical ISP. Microsoft slipped into this somewhat when it partnered with UUnet and discovered that it was better off being an ISP than doing online services. Furthermore, many ISPs I talk to are saying how they want to move into Web farms and get out of the ISP business.

It seems like a confluence to me. But to murk the waters, an article in *Interactive Week* popped up discussing a survey done by Odyssey, Inc. out of San Francisco. The following facts were revealed. 48 percent of households surfing the Web used an ISP compared to 35 percent going through a commercial online service.

This is important because only six months ago only 30 percent used an ISP while 54 percent went through a commercial service. The trend is clear. While I believe that the bean-counter supposition is correct, there are barriers to it actually happening. The primary barrier is the mediocre Internet connection you get through AOL or CIS and the hourly billing. These systems need to greatly improve access speeds above all. And they have to incorporate Navigator or Explorer as the default browser. Mosaic and these other browsers simply do not cut it. The online services market will be gone and these folks will be out of business before they can realize the potential profits from Internet access.

As an aside there were some other interesting tidbits in the study cited above. Just things to mull over. The poll found that only 1 percent of Web surfers subscribed to MSN and a piddling 4 percent used Internet Explorer. Netscape users amounted to 56 percent with the rest using a host of other browsers. ♦

Dvorak's Recipe Nook

by John C. Dvorak

Free Recipes from the Best Chefs in the World

An interesting thing about great cooking is that great recipes are a lot like software code used to be before Microsoft. Recipes were freely shared for the benefit of all. If you go to a great restaurant and have an incredible dish that you'd like to duplicate at home, 99 percent of the chefs will gladly give up the recipe. There is a trick to this, though. Always ask for the recipe before you pay the check. It gives the staff a little incentive to get the recipe for you.

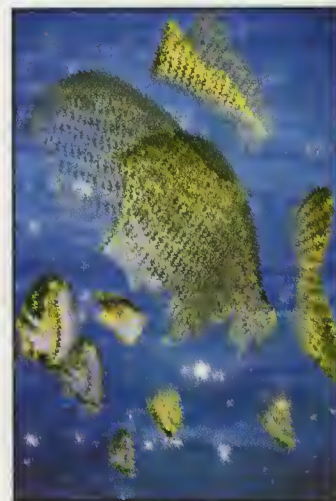
This is a great way to collect recipes and I advise you all to collect as many as possible and pass them along to me. We'll put together a serious cookbook, OK? (<mailto:dvorak@usa.net>)

Many chefs actually tire of giving away recipes and put together entire cookbooks of their house recipes. Look for the latest Hubert Keller cookbook with incredible dishes from San Francisco's top restaurant, Fleur de Lys. Books by top chefs tend to have a lot of what I call "impact meals" carefully described. These are perfect for entertaining.

And while you're on the lookout for cookbooks done by great chefs, don't ignore old classics at used and rare book stores. The meals are seldom contemporary, but they are often so offbeat that they too have a lot of impact on guests. Recently I collected the *Hotel St. Francis Cookbook* by Victor Hirtzler, who was the chef there circa 1917. This was the era of incredibly elaborate and complicated cooking. I was intrigued by a recipe for a local fish, striped bass. Here it is as it would have been done in 1917. Adjust as you see fit.

Striped Bass, Buena Vista

Put in a wide copper fish pan one cup olive oil, two sliced onions, two sliced green peppers, and then fry. When done add four cloves of chopped garlic and let them set in the hot oil for a second. Then add a pint of claret, one dozen fresh mushrooms, six peeled and sliced tomatoes, and one half can of sliced pimentos. Bring to a boil and then add five pounds of striped bass cut in slices two inches thick. Season with salt, pepper and a little paprika; cover and simmer for 30 minutes. Cut eight slices of bread the same thickness as for toasting, and fry in hot oil. Rub the fried bread with a piece of garlic, lay on a deep platter, put the fish on top of the toast, pour sauce over the fish and sprinkle with chopped parsley.



Wow! They don't cook like that any more at the St. Francis! You'll note that recipes of this era are vague in many ways. It was assumed that everyone would add their own spin to things. When they say "cook until done" it means cook until you think it's done as far as you are concerned. The concept of robotic cooking where you are told exactly what to do and how to do it is a rather recent invention.

All signs point

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